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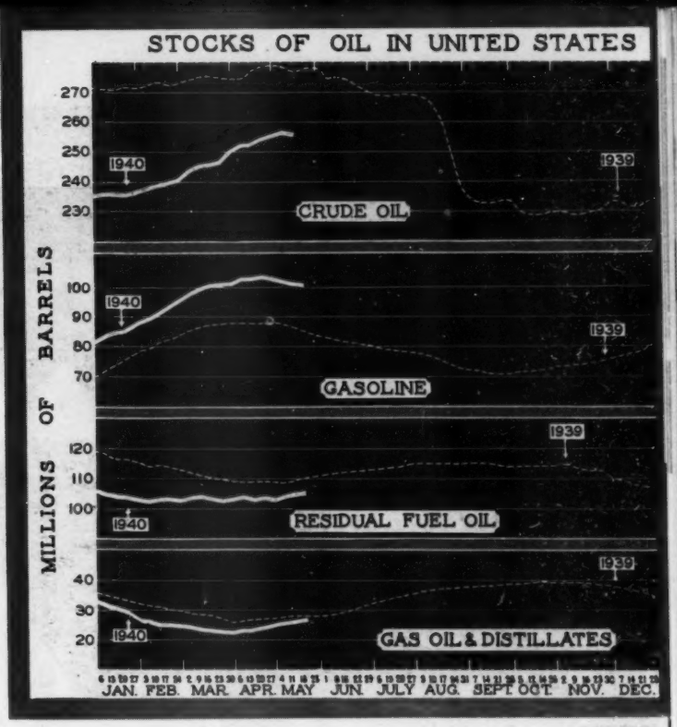
A "GOOD" CEMENT JOB WILL STAND *TWO* TESTS

BAKER CEMENT WASH-DOWN WHIRLER FLOAT SHOE

Trends

Louisiana's Output At Peak With Texas Planning Reduction



AN all-time peak of 300,000 bbl. daily in Louisiana's crude-oil production; the general lowering of low-gravity crude-oil prices in California and a determined effort of a group of Texas producers to bring that state's June production in line with estimated demand were developments of the past week. From the market viewpoint, refined products continued to reflect an inactive export movement, with further weakness in both Pennsylvania Grade and western lubricating oils.

CRUDE PRODUCTION *3,845,683 bbl. daily average—up 14,669 bbl. One year ago 3,440,966 bbl.*

CRUDE STOCKS *257,079,000 bbl. as of May 11—down 1,131,000 bbl. One year ago 277,739,000 bbl.*

GASOLINE STOCKS *101,015,000 bbl. as of May 18—down 302,000 bbl. One year ago 85,705,000 bbl.*

RESIDUAL FUEL-OIL STOCKS *104,245,000 bbl. as of May 18—up 260,000 bbl. One year ago 110,348,000 bbl.*

GAS OIL AND DISTILLATES *27,345,000 bbl. as of May 18—up 793,000 bbl. One year ago 27,207,000 bbl.*

REFINERY RUNS *3,665,000 bbl. daily week ended May 18—up 45,000 bbl. One year ago 3,460,000 bbl.*

The trend in Louisiana's production has been upward for several weeks, although the demand for the state's oil as projected by the Bureau of Mines has shown little change since the first of the year. Louisiana's daily production last week was 35,500 bbl. daily in excess of the B. of M.'s estimate. A new governor and a new conservation commissioner who took office last week have promised important changes in the operation of the department which has charge of conservation and division of available markets, and operators have expressed confidence that this will result in a reduction in crude output so as to end that state's recent contribution to overproduction.

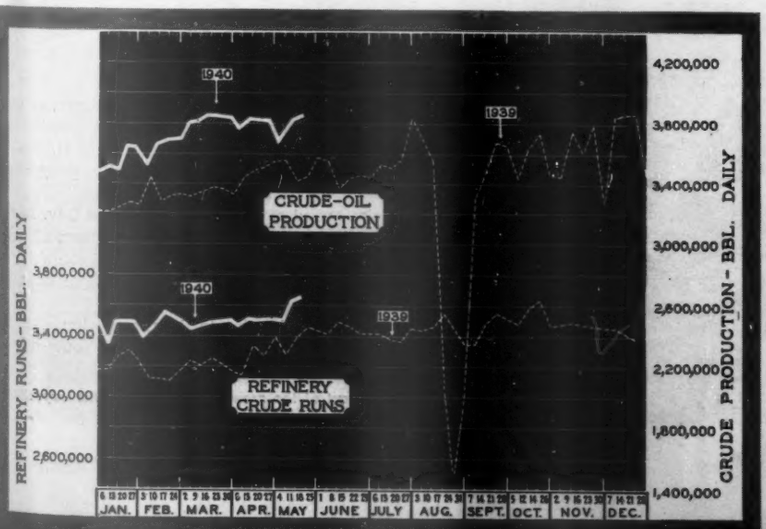
In California, several large and small buyers met the reductions in crude-price schedules originally made effective by the Standard of California on February 1. Continued weakness in the West Coast fuel-oil market was the explanation given for the reductions. The heavy-oil market in California has suffered, largely because of a reduction in the export movement. The state's crude output has been consistently above demand most of the time since the first of the year.

The question of whether Texas would reduce its crude production in June was still in doubt the first of the week. At the Austin hearing Monday evidence was presented to show that the state's production should be reduced 100,000 bbl. daily or more to bring it in line with the current demand. Such a reduction would bring the state's output down to the B. of M.'s estimate for June. A similar effort to lower the state's production for April and May failed as revealed by the production level of the past 2 months. It was brought out at the Monday hearing that the Texas crude-production and refinery situation is particularly critical at this time due to the further decline in export business at the Gulf Coast, a development of the expanded war in Europe. Charges are freely made in Texas that the state's conservation and proration policy with resulting excess production is being dominated by political expediency in connection with a state primary election to be held in July.

A report Tuesday said a majority of the commission was in favor of lowering the state's output next month.

DAILY AVERAGE PRODUCTION FOR WEEK

	May 18, 1940	Bur. Mines May est. of demand	May state allowables	May 11, 1940
Oklahoma City	95,700	.....	.....	93,000
Seminole fields	37,775	.....	.....	37,725
Remainder of state	280,500	.....	.....	279,200
Total Oklahoma	413,975	408,100	408,100	409,925
East Texas	396,491	.....	.....	396,448
West Texas	262,204	.....	.....	261,537
North Central Texas	145,300	.....	.....	140,810
Texas Panhandle	71,643	.....	.....	77,542
East Central Texas	88,891	.....	.....	86,154
Texas Gulf Coast	385,460	.....	.....	385,446
Southwest Texas	110,000	.....	.....	109,450
Total Texas	1,459,989	1,344,200	1,421,176	1,457,387
North Louisiana	70,810	.....	.....	70,735
Gulf Coast Louisiana	229,598	.....	.....	227,896
Total Louisiana	300,408	264,500	293,080	298 631
California	623,750	592,600	592,600	630,250
Kansas	165,200	158,100	158,100	149,350
Arkansas	71,525	64,500	70.147	70,145
Mississippi	8,280	5,800	.....	6,760
Eastern fields	110,600	109,400	.....	108,700
Illinois	436,066	392,900	.....	438,039
Michigan	61,040	63,200	.....	62,187
New Mexico	106,630	103,900	107,000	115,000
Rocky Mountain area	88,220	93,800	.....	84,640
Total United States	3,845,683	3,601,000	.....	3,831,014



Left: B. C. Heacock, president, Caterpillar Tractor Co., who paid a tribute to engineering enterprise. Center: W. G. Skelly, president of the exposition. "The oil industry will be ready for any national emergency." Oklahoma's governor, Leon C. Phillips, in foreground. Right: Andrew F. Schoeppel, chairman of the Kansas Corporation Commission. He said oil men were good stewards of their industry and showed every indication that they would continue to serve capably

Big Oil Show Opens on Note Of National Readiness

By T. F. SMILEY

IT was not just force of habit that brought the crowd to its feet and bared every head as Eddie Gambill's baton flashed and the American Legion band snapped into the "Star-Spangled Banner" at ceremonies opening the International Petroleum Exposition's biennial oil show in Tulsa last Saturday afternoon. The country's sudden movement in the direction of defensive preparations, along with realization of the sterner role the oil industry and the equipment manufacturers may have to play, gave a livelier significance to a familiar patriotic ritual.

W. G. Skelly, head of the Skelly Oil Co. and president of the exposition, voiced the temper of his hearers when he said: "We would rather serve a world at peace than a world at war. The oil industry of America will be ready for any national emergency."

On account of a rainstorm that broke shortly before the hour set for the ceremonies they were carried out in the exhibitors' lounge instead of in the open, as had been planned. The clouds later disappeared, but the mammoth American flag, 60 by 80 ft. and an impressive sight at the expositions, was not unfurled across Drake Drive till Sunday afternoon.

The attendance on Sunday, always touching its peak on that day, broke all records. William B. Way, general manager, reported that 29,158 persons streamed through the gates, in comparison with 25,849 in 1938 and 17,167 in 1936. On Monday and Tuesday the attendance kept up the standard set on Sunday, and Mr. Way predicted that before the 1940 show ended the total attendance would pass 150,000.

The visitors this year were declared to be more representative of the oil industry as a whole and of the world-wide character of the exposition than ever before. Tuesday evening more than 100 delegates, representing 20 foreign countries, had registered, and the list was not yet complete. John A. Silsbee, of the Sinclair Prairie Oil Co.'s engineering department, read the names of those who already had arrived when the opening exercises were held, and he extended cordial greetings.

Opening Ceremonies

The opening program, with T. P. Gilmer, of Okmulgee, Okla., as master of ceremonies, was broadcast over a national network. Mayor C. H. Veale, of Tulsa, gave the freedom of the city, gaily flag-decked, to the thousands of visitors.

"We're proud of this show," declared Gov. Leon C. Phillips, of Oklahoma, in a brief address of welcome. "Here is one industry that has been able to run on its own steam without the aid of outside agencies."

"We do not subscribe to the theory that you oil men have not been good stewards of your indus-

View of part of the crowd that thronged the exposition grounds on opening day is seen at left

try," said Andrew F. Schoeppel, chairman of the Kansas Corporation Commission, in a short talk in which he brought greetings from his state. "We think you have been good stewards and we are confident you will continue to be."

B. C. Heacock, president of the Caterpillar Tractor Co., Peoria, Ill., and principal speaker, paid a tribute to the inventiveness and research of men to whom the oil industry and the makers of its tools owe much of their progress.

"Behind this exposition are the refineries and the manufacturers of equipment," said Mr. Heacock. "And behind them are the principal reasons for the progress of the industry—science, the engineer, the chemist, and the research man. This show tells me that so far as the engineers are concerned, incentive is still operating. Influences have been brought to bear on our society that have done much to destroy incentive. Why work? But there are still people who want to build up a business, although the edge is off their enthusiasm. In no other business perhaps is 'venture capital' needed so much as in oil, but 'venture brains' are just as important. Too many of us are wont to believe that 1929 marked the all-time peak of prosperity. Yet look at what the scientist and the engineer have done in the interval. There hasn't been a single year in which some noteworthy achievement has not been recorded. These men recognize no frontiers. For them there always are vast unexplored worlds of endeavor and opportunity."

Mr. Skelly was introduced as the "spark plug of the exposition."

"The officers and management of the exposition," he said, "recognize the great contribution made, not only by the leaders of the industry but by the equipment manufacturers, the supply companies, the scientific and technical organizations, trade associations, educational institutions and governmental departments, whose unselfish and untiring efforts for the advancement of the industry symbolize a spirit of cooperation which is typically American.

"The petroleum industry and the allied industries represented in the exhibits displayed at this show exemplify the courage, confidence, and resourcefulness, the ingenuity and free enterprise of American business men. The oil man (and I include all those who comprise or service the petroleum industry) is a pioneering spirit, an empire builder, an explorer on the frontier of new fields of human endeavor seeking new scientific depths to plumb and new worlds to conquer.

"While the Government is urging unprecedented expenditures and industrial preparedness for national defense, the oil industry of America is prepared to render a great patriotic service. Without subsidy, coercion or government financing, the petroleum industry is ready, equipped and willing to duplicate its successful and patriotic effort in the first World War.

"While nations engage in a great war for political power and economic supremacy in the world, the product of our industry is the one vital essential to both military victory and industrial progress. Oil for power and oil for lubrication—to say nothing of a thousand byproducts.

"Through the use of the airplane, the tank and motorized warfare, recent events have proven the American oil industry to be more indispensable than it was in 1917-18. Through the courage of its leaders and the scientific advances in its productive processes and capacities, it will be found equal to whatever demands may be placed upon it.

"The oil fraternity believes that oil, like all other mineral resources and natural advantages, was placed on the earth for the comfort, convenience and the advancement of the human family, and not for its destruction. In officially opening this, the eleventh International Petroleum Exposition, I dedicate it to the further advancement of the petroleum industry in a world of greater industrial progress, economic prosperity and human happiness."

As Mr. Skelly ended his talk the band swung into the national anthem. With the closing note three blasts from all the exposition whistles proclaimed that the International Petroleum Exposition of 1940 was formally open.

THINGS TO KNOW ABOUT THE OIL SHOW

The total value of more than 600 exhibits exceeds $15,000,000, constituting the largest industrial show ever held.

In the first 3 days of the show equipment sales aggregated $2,000,000.

Attendance on Sunday—always the peak—was 29,158, breaking all exposition records.

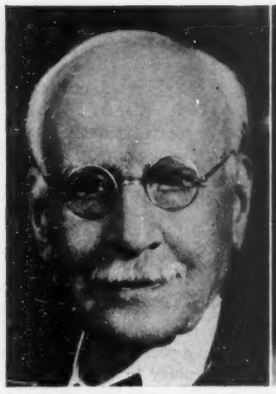
Within 15 minutes after the opening ceremonies the first contract for exhibition space in the 1942 show had been signed.

Foreign countries represented by more than 150 delegates include Argentina, Borneo, Canada, Colombia, Cuba, England, Hungary, India, Japan, Java, Mexico, Equador, Netherlands, Peru, Trinidad, Venezuela, Yugoslavia, and Sarawak.

The heaviest exhibit is a compressor that weighs 132,000 lb. The smallest is a ball-bearing attachment for a micrometer that weighs about an eighth of an ounce.

All exhibits were described in the May 16 issue of The Oil and Gas Journal.

Aerial view of exposition grounds. Parked cars surrounding the grounds give an idea of the crowds attending the exposition



ROBERT DICKSON LOCKE
(Pennsylvania)
Titusville, Pa. Aged 90; 79 years' service. Worked around Drake well. Operated small crude still in 1863. Drilled second Drake well.

H. A. (Lon) MELAT
(Texas)
McAllen, Tex. Aged 82; 66 years' service. Farm boss at Richburg, N. Y. in 1880. Active in gas, pipe line and production.

FRANCIS MARION SELBY
(Ohio)
Marietta, Ohio. Aged 84; 43 years' service. Has been operating since 1897 in Middle West, California, Mid-Continent.

JAMES GEORGE WARD
(West Virginia)
Parkersburg, W. Va. Aged 60; 47 years' service. Began as Pumper at Taylorstown, Pa., in 1894. Advanced from boiler fireman to general manager.

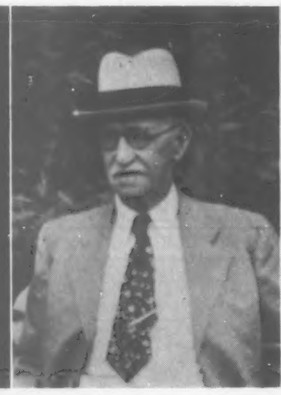
WILLIAM M. FULTON
(Montana)
Shelby, Mont. Aged 70; 52 years' service. Muleskinner for John Galey at Titusville, Pa. wildcat in 1888. Kevins-Sunburst "Dry Hole King."

Grand Old Men of Production

Selected by State Committees

L. P. St. CLAIR
(California)
Los Angeles, Calif. Aged 69; 39 years' service. Organized Independent Oil Producers Agency and sponsored California gas conservation law.

JOHN S. HASSON
(Louisiana)
St. Marys, Ohio. Aged 69; 57 years' service. Began as pumper in McKean County, Pa. Retired in charge of Shreveport division, Ohio Oil Co.

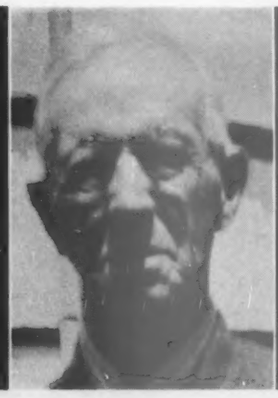


JOHN FAY
(New York)
Wellsville, N. Y. Aged 90; 61 years' service. Tool dresser at Alma, N. Y. in 1879. Has been drilling and producing for himself in Allegany field.

W. M. HOLLAND
(Wyoming)
Casper, Wyo. Aged 66; 50 years' service. Began as roustabout for Ohio Oil Co. in Lima, Ohio. Outstanding man in production in Wyoming.

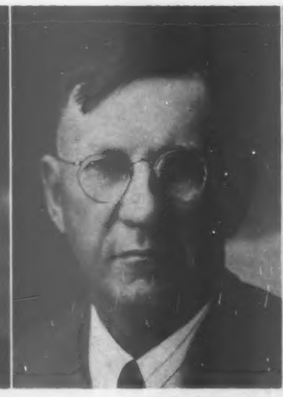
A. E. (Archie) BALDWIN
(Kentucky)
Bridgeport, Ill. Aged 70; 56 years' service. General manager, Snowden & McSweeney Co. Began as tool dresser at Duke Center, 1884.

J. A. HULL
(Oklahoma)
Tulsa. Aged 70; 54 years' service. Began with manufacturer of fishing tools at Callery, Pa. Independent operator. Built gasoline plant at Glenpool.



MANCIL E. TURNER
(New Mexico)
Hollywood, N. M. Aged 84; 70 years' service. Began at Foxburg, Pa. on rod and tubing crew. As driller says he never lost a hole.

A. J. (Andy) FAUST
(Illinois)
Lawrenceville, Ill. Aged 80; 42 years' service. Worked in Indiana and Ohio and Rumanian fields. Last district superintendent, Red Bank Oil Co.



S. I. NELSON
(Indiana)
Princeton, Ind. Aged 61; 44 years' service. Began in 1896 as pumper for North East Oil Co. in Morgan County, Ohio. Now drilling contractor.

HOWARD D. ATHA
(Michigan)
Mount Pleasant, Mich. Aged 65; 37 years' service. President Gordon Oil Co. Independent operator and leader in industry organization.

Old Timers Honored At Expo Ceremony

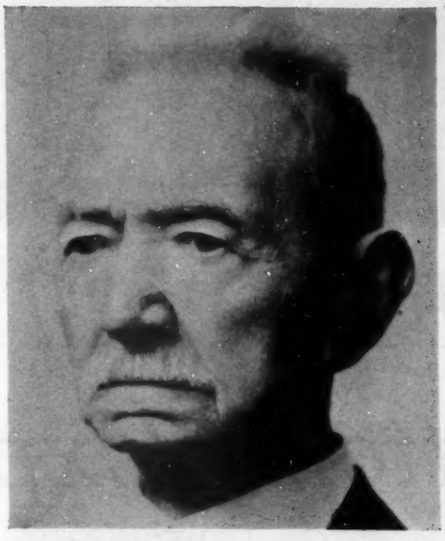
P. H. (Patsy) Mack, 88, of Bradford, Pa., was awarded the medal for "Pioneer of Pioneers" at memorial services for "old timers" held last Sunday afternoon at the International Petroleum Exposition, Tulsa.

Pioneers chosen for the honor of "Grand Old Man" in the various divisions follow: Refining, George H. Taber, 81, Pittsburgh, Pa.; marketing, William M. Schermerhorn, 84, La Salle, Ill.; pipe line, Forrest M. Towl, 77, New York; natural gas, Howell C. Cooper, 66, Pittsburgh; natural gasoline, Frank L. Chase, 75, Dallas, Tex.; land, lease and legal, James A. Veasey, 64, Ann Arbor, Mich.; supplies and equipment, John M. Crawford, 73, Parkersburg, W. Va.; production, Guy T. Berry, 70, Independence, Kans.; purchasing agents, Frank D. Bryant, of San Francisco.

Mr. Mack went to work at the age of 11 as a water boy on the Lake Shore & Michigan Southern Railroad. He worked in railroad shops till 1876, when he got a job with Mount & Kugler, manufacturers of drilling tools, in Oil City, Pa. He joined the Oil Well Supply Co. in Summit City, Pa., in April, 1880, and was in the employ of that company continuously for 50 years as machinist, foreman, superintendent, and manager successively. He retired in 1931. During his service he invented many oil tools.

The awards of medals were made by E. M. Gallaher, city attorney of Tulsa. Mr. Mack was not present, but a telegram from him was read by Mr. Gallaher.

The exercises, held in the open air near the replica of the Drake well, were presided over by J. P. Flanagan, chairman of the exposition's memorial committee. The audience sang "America," and following an invocation by Rev. Dr. C. W. Kerr, pastor of the First Presbyterian Church, Tulsa, W. G. Skelly, president of the exposition and head of the Skelly Oil Co., spoke briefly.



P. H. (Patsy) Mack, 88, who was named "Pioneer of Pioneers" during a special ceremony Sunday

"These men we are honoring today have the spirit that typifies free American enterprise," said Mr. Skelly. "This service is really the high point in the exposition and we want these pioneers to know we appreciate the part they had in building the oil industry. They didn't have the marvelous tools we have today. Even so short a time as 17 years ago, when this exposition was born, we had hard work drilling to 3,500 ft. with our cable tools. Now a 10,000-ft. well is almost a commonplace."

The principal address was given by Rev. F. A. Driscoll, headmaster of Cascia Hall, Tulsa.

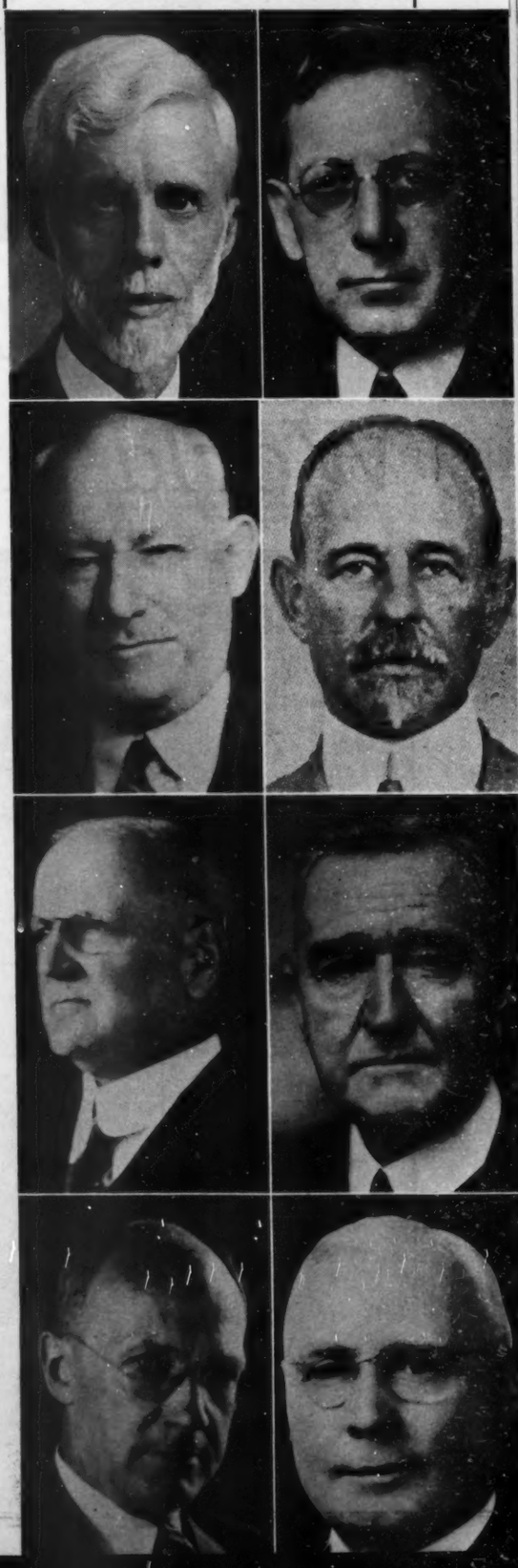
"No other industry goes about it in such a methodical way to single out its pioneers for special recognition," said Father Driscoll. "There are not many left of the type we honor today — the wildcatter who without aid of geology or geophysics, constantly extended the industry's horizons. The day of the individual largely has passed. The day of collective effort is here. But the spirit of the pioneer still runs true. The spirit of aggressive research and cooperation still prevails. In no other industry are there better relations between employer and employe. To all we pay a tribute of respect."

The exercises closed with the laying of a wreath at the nearby monument "dedicated to the memory of those sturdy pioneers, both living and dead, who by their faithful years of service in the petroleum industry have developed it so that we of the living may enjoy its many blessings." The wreath was deposited by W. L. Connelly, chairman of the board of the Sinclair Prairie Oil Co.

W. L. Connelly, chairman of the board, Sinclair Prairie Oil Co., and J. P. Flanagan, chairman of the "old timers" committee, lay wreath on monument dedicated to the memory of old timers living and dead

GRAND OLD MEN

Top row: Guy T. Berry, 70, Independence, Kans., production division, and H. C. Cooper, 66, Pittsburgh, Pa., natural-gas division. Second row: Frank Chase, 75, Dallas, Tex., natural-gasoline division, and Forrest M. Towl, 77, New York, pipe-line division. Third row: George Taber, Sr., 81, Pittsburgh, Pa., refining division, and W. M. Schermerhorn, 84, La Salle, Ill., marketing division. Bottom row: James A. Veasey, 64, Ann Arbor, Mich., land, lease and legal division, and John M. Crawford, 73, Parkersburg, W. Va., supplies and equipment division



Oil Men From All Parts of World Attend Exposition

The Nomads, whose active membership is confined to representatives of oil-field manufacturing, supply and service organizations who have visited countries outside this country in the interest of their companies, were in charge of registrations and entertainment of foreign delegates to the exposition. The new International Building, the gift of the late W. R. Braden, charter member of the Tulsa organization, was the headquarters for approximately 150 oil men who attended the exposition from countries outside the United States. The Nomads were hosts at a dinner to the foreign delegates held Tuesday night at the Tulsa Club.

E. L. Decker of the Martin-Decker Corp., Los Angeles, was elected chairman of the board of regents of the Nomad organization at a meeting held Sunday at the Exhibitors Lounge of the International Petroleum Exposition. W. F. Bettis, of the M. O. Johnston Oil Field Service Corp., was elected secretary of the organization. Eight members of the board of regents representing the Los Angeles, Houston, New York and Tulsa chapters, attended the first meeting of the national organization. A revised constitution and bylaws were approved at the meeting.

Top of page (left): J. C. B. van den Berg, de Bataafsche P.M., Netherlands, and daughter Helga. (Center): Colombian delegates, Pablo Mendoza, Guillermo Navarrete, Hernando Madero and Gilberto Delgado. (Right): R. A. Ratliff, International Petroleum Co., Negritos, Peru

Left (top) — The Japanese delegation: Shigeru Yamanouchi, R. Niisima and Komao Tachikawa, of Nippon Oil Co., Tokyo. (Bottom): C. T. Campodonico, New York representative of Y.P.F., Argentina; Mario L. Villa and J. A. Canessa, also of Y.P.F.

Right (top): Carlos Perez de la Cova, and Jose Martorano, engineers of the Petroleum department of the Ministry of Fomento, Caracas, Venezuelan delegates. (Bottom): Senor Vicente Cortes Herrera, general manager of Petroleos Mexicanos, Mexico City, and Prof. V. C. Illing, Imperial College, South Kensington, London, member of council, London Institute of Petroleum

REGISTRATION LIST OF INTERNATIONAL VISITORS

ARGENTINA

Carlos A. Delorme, Buenos Aires.
A. E. Catinari, Buenos Aires.
Carlos Damm, Buenos Aires.
Glen M. Ruby, Depto. Geologia, Y.P.F., Buenos Aires.
Teofilo Tabaners, Argentine Government Oil Fields. Buenos Aires.
Julio Canessa, Argentine Government Oil Fields, Buenos Aires.
C. T. Campodonico, Argentine Government Oil Fields. Buenos Aires.
Mario L. Villa, Argentine Government Oil Fields, Buenos Aires.
Tomas Suero, Y.P.F., Buenos Aires.

BRITISH EAST INDIES

A. J. de Jager, Borneo.
H. L. Fountain, Sarawak Oilfields, Ltd., Sarawak.

BRITISH WEST INDIES

R. B. Scanland, J. N. Harriman & Co., Ltd., San Fernando, Trinidad.
H. A. Rogers, Trinidad Leaseholds, Ltd., Pointe a Pierre, Trinidad.
George A. Foster, Kern Trinidad Oilfields, Ltd., San Fernando, Trinidad.
J. H. Baker, Port of Spain, Trinidad.
W. N. Burgin, United British Oilfields, Point Fortin, Trinidad.
J. W. Stringer, Trinidad Leaseholds, Ltd.. Forest Reserve, Trinidad.
M. J. Thompson, Industrial Agencies, San Fernando, Trinidad.
T. J. Walne, Neal & Massey Engineering Co., Ltd., Port of Spain.
R. H. McPeake, Oil Well Supply Co., Port of Spain.

CANADA

R. E. Trammell, Royalite Oil Co., Turner Valley, Alberta.
Floyd Walker, Royalite Oil Co., Turner Valley, Alberta.
James A. Warke, Brown, Moyer & Brown, Alberta.
Barton A. Myers, International Petroleum Co., Toronto.
W. S. Herron, Okalta Oils, Ltd.. Calgary, Alta.
H. W. Palkowsky, International Petroleum Co., Toronto.
John M. Polomark, Brown Oil Corp., Ltd., Calgary.
Ole Nevra, Brown, Moyer & Brown, Turner Valley.
R. A. Brown. Brown Oil Co., Calgary.
A. E. Rubery. International Petroleum Co., Toronto.
J. Leonard Mander, Waywasecapow Oil Co., Ltd., Winnipeg, Man.
Maynard J. Davies, Davies Petroleum Co., Calgary.
L. P. Maier, Andian National Corp., Toronto.
Charles J. Penn, Canadian Oil & Gas Co., Toronto.
Charles J. Penn, Canada Oil & Gas, Toronto.
M. E. Keenan, Oil Well Supply Co., Calgary.

CHINA

Tsin-Lon Ouang, vice consul of China.

COLOMBIA

Gilberto Delgado, Bogota.
R. W. Lynch, Socony-Vacuum Oil Co., Aquas Claras, Santander.
Madero Hernando, Colombian Government.
Guillermo Navarreta, Bogota.
Paul R. Ratliff, Tropical Oil Co., El Centro.
Charles Castner, Tropical Oil Co., El Centro.
H. R. Bocock, Tropical Oil Co., El Centro.
Jerry Newman, Tropical Oil Co.
M. M. Brisco, Tropical Oil Co., Barrancabermeja.
Pablo E. Mendoza, Colombian Government.

CUBA

Rogelio Dominguez, Oil Well Drilling Co., Motembo.
Roberto Escarpenter, Oil Well Drilling Co., Havana.
Charles Ginart, Oil Well Drilling Co., Havana.
Dr. Arturo Macari, Macari Oil & Naphtha Co., Havana.
W. B. Rude, Santa Clara Naphtha Co., Los Arabos.
Emilio Rodriguez, Havana.
John H. St. John, Havana.
E. LeRoy Stark, Federal Operations Co., Los Arabos.

ECUADOR

Entique Coloma Silva, Gobievno del Ecuador, Quito.

EGYPT

H. W. Haight, Standard Oil Co. of Egypt, Cairo.

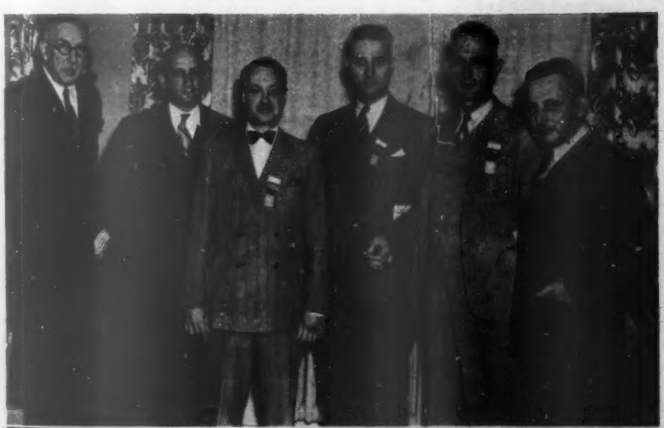
ENGLAND

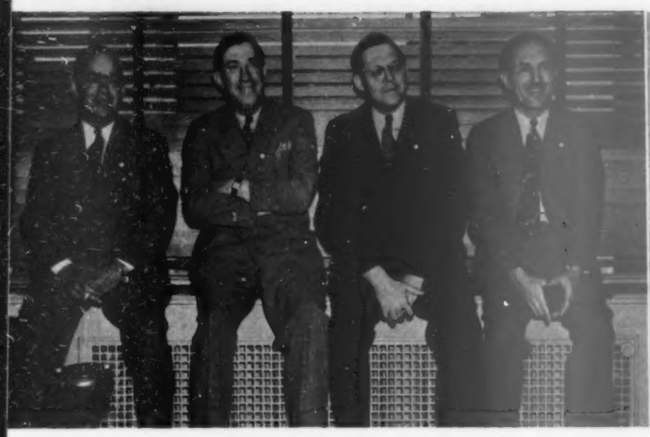
R. R. G. Rivington, Anglo-Saxon Petroleum, Herts.

(Continued on Page 44)

Below (top)—International Petroleum Co. delegation: Barton A. Myers, director, Toronto; A. Norcott, resident manager, Negritos, Peru; A. E. Rubery, buyer, Toronto; R. E. Trammell, field superintendent, Royalite Oil Co., Calgary; Floyd Walker, drilling superintendent, Royalite Oil Co., Calgary, and S. L. Slaughter, drilling superintendent, Negritos, Peru. (Bottom)—Delegates from foreign operations of Standard Oil Co. of New Jersey: Seated are H. W. Palkowsky, petroleum engineer, Toronto; J. A. Clark, manager, Lago Petroleum Co., Venezuela, and E. N. Leibacher, resident manager, Netherland Indies N.K.P.M. Standing are Siro Vazquez, assistant chief petroleum engineer, Standard Oil Co. of Venezuela; G. A. Bannantine, general superintendent, Hungary; H. W. Haight, manager, Standard Oil Co. of Egypt, Cairo; R. D. Murphy, reservoir engineer, Standard Oil Co. of Venezuela, and R. E. Watson, chief petroleum engineer, Lago Petroleum Corp., Maracaibo, Venezuela

Below (top)—Mexican delegation: Standing are Rodolfo M. Fernandez, Petroleos Mexicanos; Col. Dan E. K. Breen, independent; Vidal Rangel, Jose Rodriguez and Salomon F. Sosa, all of Petroleos Mexicanos. Seated are Rafael Michel, technical assistant, Carlos Romanillo and M. de la Garza Cardenas, all of Petroleos Mexicanos. (Bottom)—Part of Argentine delegation: T. Tabanera, Y.P.F. pipe-line engineer; V. Milch, a former Argentinian but now a resident of the United States; Glenn Ruby, chief geologist, Y.P.F.; A. Catinari, petroleum geologist, Y.P.F., and Carlos Delorme, pipe-line engineer, Y.P.F. Left: Tsin-Lon Ouang, vice consul of China, and wife





Extreme left: James E. Pew, Virginian Gasoline & Oil Co.; G. G. Oberfell, Phillips Petroleum Co.; R. T. Couch, Virginian Gasoline & Oil Co., and R. C. Alden, Phillips Petroleum Co. Left: E. L. Peck, Cities Service Oil Co.; Dr. G. G. Brown, University of Michigan; B. R. Carney, Shell Oil Co., Inc.; F. F. Ketchum, Owens, Libby-Owens, and H. H. Beeson, Sabine Valley Gasoline Co., Inc.

Below: President George Bunn presenting Dr. G. G. Brown with the Hanlon award for the latter's service to the natural-gasoline industry within the past year

Natural-Gasoline Men Told Industry Must Meet Challenge

By W. T. ZIEGENHAIN

THE spirit of the natural-gasoline industry was manifested during the 3 days of well-attended technical meetings which comprised the program of the nineteenth annual convention of the Natural Gasoline Association of America held in Tulsa last week. The large attendance was impressive because the industry is passing through a long period of low product prices, the value of 26-70 natural having been at or below 2 cents a gallon for the greater portion of 1940 to date.

George P. Bunn, of the Phillips Petroleum Co. and president of the association, offered a clue when he stressed the cooperative feeling that has distinguished the association work. In this respect he said: "Cooperatively, we can continue to improve our processes and methods and to fit our technique to the newer ventures: chemical conversion, distillate production, gas recycling, pressure maintenance, and other measures of conservation and economy yet to appear." Referring to the position the industry has attained and to the position it has assumed among other branches of the petroleum field, he continued: "During the past 20 years the manufacture of natural gasoline has been builded from a mere idea to an industry whose plants normally supply over $50,000,000 in wholesale liquid products annually. Although we are only a part of one of the nation's giants, the allied oil and gas industries, nearly $250,000,000 invested in natural-gasoline plants now represents a mature, substantial industry in its own right. No longer do we have a mere 'crying interest' with the parent industries. The Natural Gasoline Association of America, almost 21 years old, must manfully put on maturity and even more zealously aid solution of the problems of the industry it represents. It is now our challenge to maintain and extend, with the grownup poise and dignity in which—it seems to me—we have already attained respectable standing, the great conservation of natural resources to which we have heretofore accustomed the fields of oil and gas. We must even discover other valuable derivatives of, and additional economic uses to which to put the liquid products with which we treat. There are no finer, more versatile, more courageous technicians and researchers than those among or associated with the members of this organization and of our ally, the California Natural Gasoline Association.

"It has been our policy primarily to coordinate and codify the practices of the industry. We should be a clearing house for assembling facts and conducting or guiding research. It is our purpose to continue with projects until our aims are fulfilled. We have not hurried matters merely to show finished accomplishments. This we believe to be a wise policy making for thoroughness. Much of our committee and board work has to do with review and revisions of existing standards as changes of pulse and practice in the industry suggest. Not infrequently such studies indicate few

N.G.A.A. OFFICERS

Officers of the Natural Gasoline Association of America for the coming year will be same as at present, including George P. Bunn, of Phillips Petroleum Co., president; Ray E. Miller, of Hanlon-Buchanan, Inc., vice president; J. R. Jarvis, of the Lone Star Gasoline Co., vice president, and J. W. Vaiden, of Skelly Oil Co., vice president.

F. L. Rhoades, United Gas Pipe Line; R. A. Worley, Parade Gasoline Co.; E. O. Bennett, Continental Oil Co.; D. L. Katz, University of Michigan; George P. Bunn, Phillips Petroleum Co.; L. V. Cassady, Lomita Gasoline Co.; R. W. Heath, Signal Oil & Gas Corp.; J. C. Burks, O. C. Field Gasoline Corp., and H. R. Linhoff, Richfield Oil Corp.

changes are warranted. Now and then the result is merely to discourage suggestions which may be ill-timed if not inimical to the best interests of the industry. Such work, while of course non-spectacular and leaving little for public display, is, I submit, one of the important functions of the association. We must establish new standards, with changing conditions, to reflect the best practices of the industry, and to make generally available new guides, as developed."

Exemplifying this willingness to investigate and suggest changes in procedure was the report of the technical committee, as read by C. R. Williams of the Continental Oil Co., who is chairman. This report covered three important projects and interest in each was evidenced by the attention given to papers presented later upon definite phases of the problems. The committee's report covered:

1. Deviation of natural gas under high pressures.
2. Comparison of results obtained after making low-temperature fractionations.
3. Specifications and testing methods for liquefied petroleum gases.

In regard to the first problem, he reported, "It seems reasonable to predict that a method will be evolved which will serve as a practical standard for determining the high-pressure characteristics of hydrocarbon-gas mixtures." Here he recognized the work of Dr. G. G. Brown, of the University of Michigan, who spoke on that subject later. Regarding consistency of laboratory analyses when making low-temperature fractional analyses of gases, Mr. Williams offered tables in which he showed the results of a series of tests made on the same sample. Certain results varied as much as 40 per cent when reporting the normal pentane content of one sample. In the series of tests determinations were made for methane, ethane, propane, iso and normal butane, iso and normal pentane, and all heavier fractions.

Discussing the work of the committee on the third problem proposed, a set of tentative specifications were proposed which covered commercial propane, butane and mixtures of these. (See p. 43.)

Another important report, that of the gas contract committee, was read by James E. Allison, of Skelly Oil Co., who, with R. D. Turner of the same company, was chairman of the committee over the past year. In brief, the report stated that the association had promoted accuracy in testing gas through its formal adoption of the revised compression-test code for gas last year. It specifically discussed the work of the committee in its investigation of errors which may result from the accumulation of condensate in the cooling coil while making the compression test. He reported also on the investigation of meter readings due to pulsation of the gas compressor. Revision of the absorption-test code is also going on under the direction of this committee and the latter has made tentative recommendations covering the greater portion of the needed revisions within the original code. This work naturally ties into that of the gas testing committee of which H. L. Oder, of the Cities Service Oil Co., is chairman. In presenting his report he discussed in detail the revised charcoal method for testing gas. From his remarks it become apparent that the new code exhibits many advantages over that in use originally.

High-Pressure Gas

A feature of the meetings was the presentation of data and the discussion from the floor on the subject of high-pressure gas as applied to recycling, repressuring, or pressure-maintenance work. Dr. G. G. Brown, of the University of Michigan, offered curves to show the extent of deviation in the pressure-temperature relationship between hydrocarbon gases maintained under high pressures and the ordinary gas laws. The program of research assumes large practical value because of the growing practice of recovering distillate from high-pressure gas as a result of retrograde condensation and as the practice of returning the residue gas to the formations for recycling or pressure maintenance work is extended. Dr. Brown developed what he termed a "compressibility factor" for hydrocarbon gas mixtures and through its use he showed how it was possible to conveniently calculate the pressure-volume-temperature relationships of pure gases and of mixtures; for determining orifice-meter coefficients; and for estimating natural-gas reserves. Combined with data on the heat capacity of gases, the compressibility factor may be used to calculate energy content and entropy of gases under pressure, thereby establishing a sound basis for the design of compressors and for making energy balances around equipment operating under pressure.

(Continued on Page 44)

Grand-Prize Award N.G.A.A. Kinks Contest

LIQUID-LEVEL CONTROLLER

Submitted by D. B. Young

Plant Superintendent, J. E. Crosbie, Inc., Fittstown, Okla.

CONSTRUCTION: This controller is made from a gas-regulator diaphragm, set vertically with the liquid connection in bottom of one side and gas connection from top to vapor space in tank. Top of the other side is connected to a vapor space in the tank. Bottom has a drain cock to draw off any liquid that might accumulate in the diaphragm.

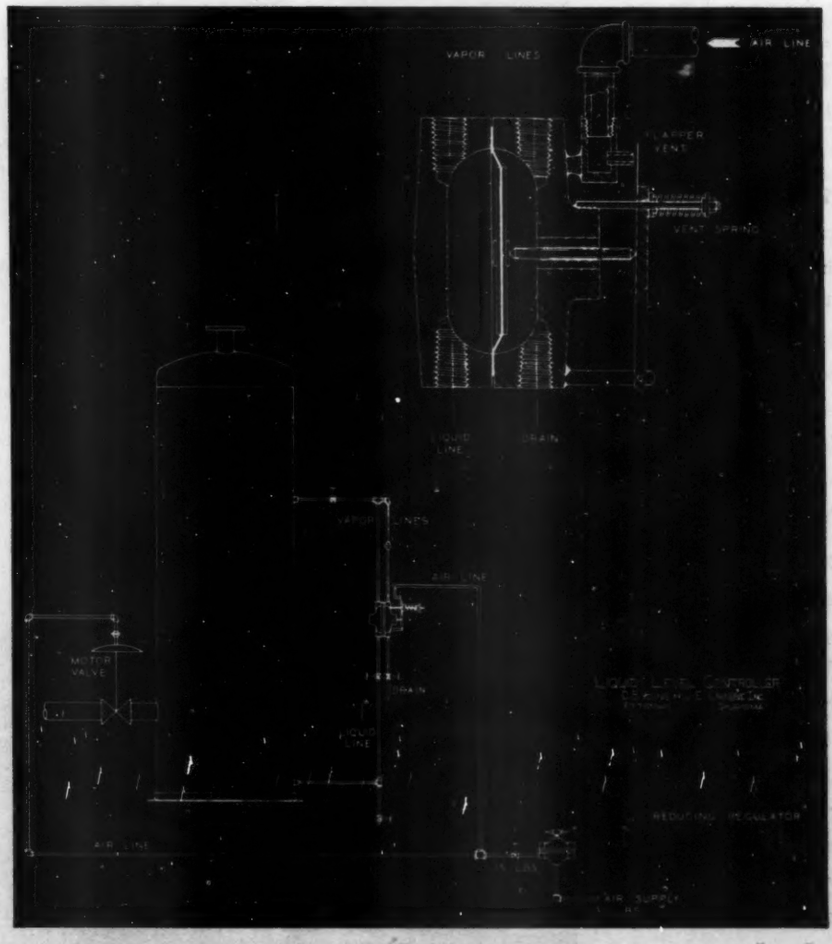
On the vapor side of diaphragm a bronze bushing was inserted, through which a machined pin was installed; movement of this pin actuates the lever which opens vent on the motor valve. There is an adjustable tension spring on the lever which pushes the pin back, closing the vent; this tension spring also regulates the height of the fluid level in the tank.

The air supply to the motor valve is adjusted to the capacity of the vent, thus when the vent is closed the valve is closed and when the vent is opened the valve is opened.

MATERIAL: The material used was on hand in the plant and was idle equipment.

COST: The approximate cost of construction was $3.50.

ADVANTAGES: Valve permits the raising or lowering of liquid level without changing the position of the controller. Conventional float cages have only about 1-ft. range whereas this controller has unlimited range by simply adjusting screw on tension spring.



SPARKS . . . FROM THE NEWS

CRUDE ADVANCE: Reverting to the pre-Drake days of the oil business a California drug concern is selling crude oil from Colusa County for relief of athlete's foot, eczema, and other skin infections at $3 a quart. This is more than $500 a barrel. The light Cretaceous oil is bottled just as it comes from the ground.

WELL TIMED: Louisiana's new conservation commissioner started off by discharging 148 so-called political employes of the department. The need for a new departmental policy was reflected in the state's all-time peak production last week, at least 15 per cent in excess of estimated demand.

GOOD START: A Greek Orthodox priest of Kansas City sprinkled water over the rig and blessed the operation prior to spudding of a Missouri wildcat financed by several Greek merchants.

JUST STARTED: Kansas Corporation Commission engineers estimate that the Kansas portion of the Hugoton gas field, 65 miles long and 40 miles wide, contains 14 trillion cubic feet of gas of which 160 million cubic feet has been withdrawn.

ENCOURAGING: One of the encouraging developments of the Texas Railroad Commission hearings is the increasing tendency to call unwanted developments by their proper names. Nowhere is the fact that this is an election year more apparent than in the Lone Star State.

SLIPPING: Despite a feverish drilling program with 100 new tests started last week the new production of the Illinois basin is not keeping pace with the decline in the old. A potential shortage has resulted in a reduction of about 3 per cent in crude oil going under the market price.

DROUGHT REMEDY: They say in Oklahoma that the International Petroleum Exposition through the years has ended many droughts. The ceremonies Saturday had to be held inside due to rain. A fair Sunday resulted in a record-breaking attendance.

STABILIZED: The gasoline market seems to be thoroughly stabilized. So thoroughly, in fact, that they can't get prices up to where they will yield at least a little profit.

MULTIPLE PAYS: No pool openers were completed in Kansas last week, which is unusual, but operators made up for the oversight by uncovering the fifth pay horizon in the Hall pool in Russell County.

CHARGE IT, PLEASE: Railroads have adopted a plan that enables vacationists including those who attend the world fairs, to pay for their tours in installments. All signs indicate, however, that the family car, operated on a pay-as-you-go basis, will be called upon to a greater extent than ever to take 'em there and back.

INTERNATIONAL PETROLEUM EXPOSITION OPENS . . .

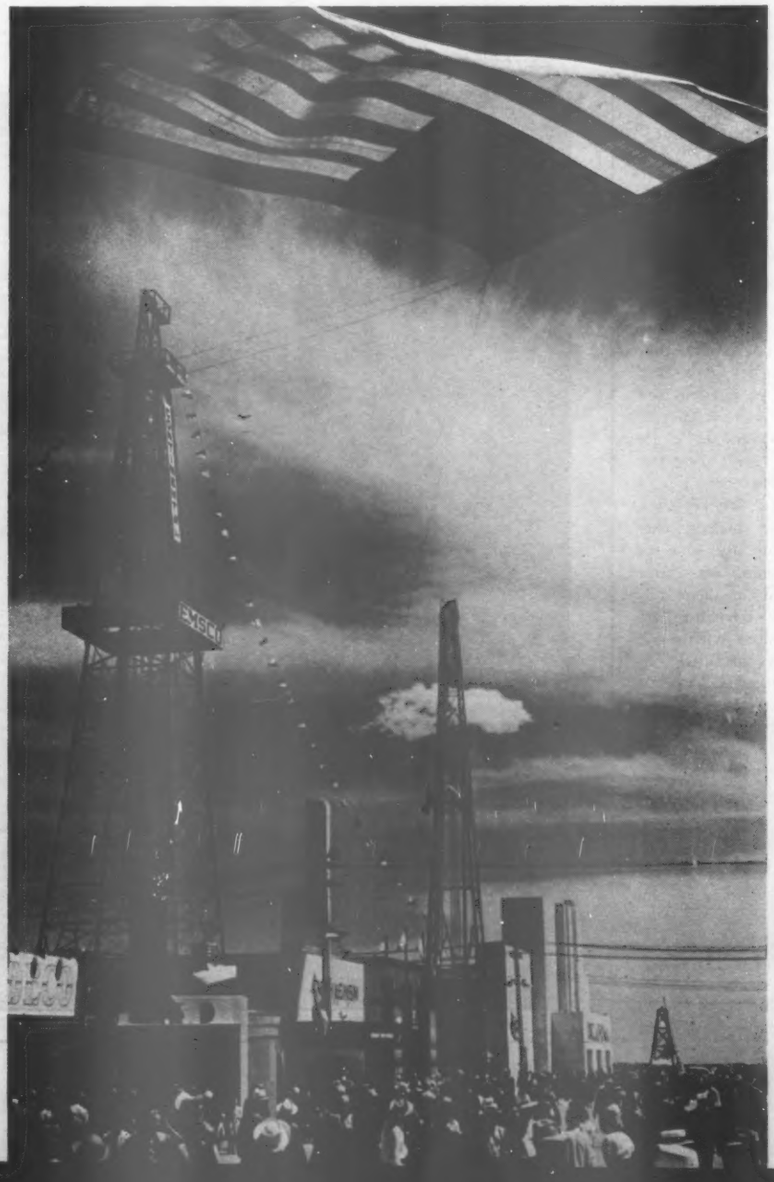


Photo by Bob McCormack. Courtesy Tulsa World.

Acme

Refinery of the Lago Oil & Transport Co., Ltd., Aruba Island, Netherland West Indies. Allied troops are protecting refineries on this island and on the neighboring island of Curacao

Full-Scale War May Bring Heavy Allied Oil Demand

NEW YORK, May 20.—There were indications the past week that world oil markets would shortly reflect the fact that European war over the past 3 weeks has been conducted on practically a full-scale basis. While there has been no general change in a dull export movement from this country there have been developments which point to increased shipments to the Allies in the near future. It is known that operators in certain South American countries have been given additional outlets since the first of the month.

It is pointed out by those closest in touch with conditions that consumption of petroleum products by the Allies has increased over the past month with this demand probably far exceeding deliveries from their several sources of supply in both hemispheres. One of the surprising developments of the war up to April 1 was the fact that the Allies' purchases of petroleum in this and other American countries were substantially below the prewar period.

This was due to the severe rationing of civilian consumption plus the fact that war use was reduced to a minimum with inactivity on all fronts.

Military experts now agree that since the German offensive through the Low Countries started, the military consumption of petroleum products has increased several times and will continue at that level until the success or failure of the action is determined. Should the Allies be successful in staying the present offensive it is assumed that they will be required to replenish depleted oil stocks with increased shipments in the immediate future. Should the German command accomplish its objective of establishing itself on the Belgian coast as it has in Netherlands, Denmark, and Norway it is agreed that the shipment of petroleum to the United Kingdom and France will be more difficult than at any other time since the war started.

Royal Dutch Moves

Considerable importance is attached to the development in which the Royal Dutch-Shell has vacated its headquarters at The Hague and, according to press announcements, now has Curacao of the Netherland West Indies as its general headquarters. The company's largest refinery is located there, but it has no facilities to house the second largest organization of the petroleum industry. It is understood that the operations of the company will be directed largely from London and New York. It is generally known that the parent company before and since the war started has greatly increased the importance of the New York office through the removal of documents from The Hague.

The Germans did acquire important oil supplies at several points and a medium-sized refinery at Rotterdam unless they were all destroyed by the Dutch previous to the evacuation. The Rotterdam refinery, which was built a few years ago, is modern and has a crude-oil capacity of 22,000 bbl. daily. The plant equipment includes cracking facilities. At the time it was built the Royal Dutch-Shell owners explained that its primary function was the production of heavy oils.

French Refineries

The Germans will acquire seven small refineries and several water terminals should the invasion of Belgium be completely successful. These plants in most cases are small topping plants with a total capacity of 12,000 bbl. daily.

Most of the France's 18 refineries are not now in the expanded war area, but are increasingly vulnerable to air attack. Its refineries have a crude-oil capacity of 151,550 bbl. daily and as a group are the most modern in Europe. Several are owned by subsidiaries of the Standard of New Jersey, Texas, Socony-Vacuum, and Royal Dutch-Shell companies and were built within the past 10 years.

There have been unconfirmed reports that some of these French plants have been shut down in recent weeks as a protective measure, thus increasing the French reliance on the importation of finished products.

While the United Kingdom has 17 refineries, varying widely in size and type with a total capacity of 132,750 bbl. daily, they are of minor importance in supplying the islands' petroleum requirements, which averaged 250,000 bbl. daily as the war started. The refineries include shale plants and topping units, with no large modern refineries.

Situation in Germany

It is agreed by all familiar with European conditions that Germany is drawing heavily on her limited oil storage to carry on the present offensive. The thousands of tanks—the largest of which are reported to consume 6 gal. per mile—and a corresponding number of airplanes and the tens of thousands of motorized units which are transporting supplies and war machinery are believed to be drawing on the Reich's oil supplies at a rate which will necessitate a quick victory if the present offensive is to be successful.

The Royal Air Force's bombing of petroleum storage depots in Hannover, Bremen, and Hamburg, carried out over the past week end, is considered to be the most vulnerable spot in the German military machine. By destroying petroleum supplies or slowing down their delivery to the mechanized units campaigning in Belgium and France, the Allies are attempting to render the motorized tanks and field artillery impotent.

The limited petroleum production within Germany is largely centered around Hannover, in the northern part of the country, where the Allied bombing raids have been centered during the past few days. Reports from Europe also hinted that raids had been carried out against Leuna, the city in which is located a large part of Germany's synthetic motor-fuel producing capacity.

In regard to Germany's oil supplies no two reports agree because it is not known accurately what supplies she is getting from Rumania and

the U.S.S.R. and how much her own production, including the manufacture of substitutes from coal, has increased since the war started.

Production from German wells, according to a recent report from the United States trade commissioner's office in Berlin, has been doubled but is still so inadequate as to play only a small role, important primarily as a source for lubricants and diesel fuel. At the same time, the production of synthetic gasoline is developing rapidly.

During the first half of 1939 greater Germany produced 2,641,140 bbl. Production continued to rise in the third quarter and in the absence of further detail it is estimated that the 1939 output was 5,875,000 bbl. If the trade commissioner's report means that the 1939 production has been doubled, it would follow that 1940 output is on the basis of 11,750,000 bbl. Probably because censorship required that the report be as vague as possible, the commissioner's review could not qualify just what was meant by doubling of production. Crude-oil production in the fields outside Neinhagen increased 83.2 per cent during the first half of 1939 and that the output of Austria increased from approximately 350,000 bbl. in 1938 to an estimated 938,000 bbl. in 1939, with plans calling for doubling that figure in 1940.

The difficulty of trying to make internal fields meet German needs in mineral oils may be seen by contrasting the most liberal possible calculations of current output, or at the rate of 11,750,000 bbl. annually, with the latest breakdown of consumption figures covering 1937. The table sets forth the consumption and production from internal facilities of all types in that year (figures in barrels):

Product—	Consumption	Internal production
Gasoline	19,932,500	10,455,000
Gas oil	9,695,000	840,000
Kerosene	689,750	310,000
Fuel oil	7,599,100	1,131,200
Lubricating oil	3,780,000	980,000
Total	41,696,350	13,716,200

Presumably, the difference between internal production of 13,716,200 bbl. in 1937 and the domestic mineral-oil production of 3,157,000 bbl., represents the derivation of 10,559,000 bbl. of products from synthetic hydrogenation of brown coal, water gas, benzol, and alcohol.

No attempt to supply national needs locally can be qualified as utterly futile when it appears to have succeeded in raising the share of local mineral oil in the total consumed from 20 per cent in 1935 to nearly 36 per cent in 2 years.

According to a statement credited to Herr Hitler light motor-fuel production from German products at the beginning of 1938 was at the annual rate of 14,450,000 bbl. with 10 additional large plants to come into production later in that year. The existence of ample natural resources in coal and lignite makes the synthetic production of mineral oil from these raw materials a particularly important feature of the German drive toward economic self-sufficiency. It is estimated that the synthetic production of oil fuels will eventually take up about 10 per cent of the annual German consumption of coal and lignite. In normal times this additional burden on the mines would not constitute a problem, yet in 1940 the need of supplying additional coal to Italy and to other neighboring lands where German fuel may be used to political and financial advantage threatens to congest both the pits themselves and the overburdened Reichsbahn which constitutes the most essential link in the distribution system.

The Polish fields falling under German influence are capable of producing approximately 4,500,000 bbl. annually. Machinery has been set up by the Reich to double this production in 1940, or to perhaps 9,000,000 bbl.

From the early part of December through March railroads were forced to carry all petroleum shipments from Rumania to Germany and the movement averaged only a little more than 140,000 bbl. during those months. Barges from Giurgiu are again plying the Danube taking on loads of oil for Germany amounting to 24,500 bbl. and 29,400 bbl. the first 2 days. Germany expects to obtain from 10,500,000 to 14,000,000 bbl. from Rumania during 1940, although it is not certain that such a quantity can be delivered because of the almost total lack of transportation for the first quarter of the year.

Under the most optimistic outlook on Germany's oil economy the 1940 supply takes this form:

	Barrels
German fields	11,750,000
Rumania	10,500,000
Soviet Russia	7,000,000
Potential crude	29,250,000
Synthetic oil	14,450,000
Grand total	43,700,000

According to reports regarding German-Soviet trade negotiations commitments exist for Russia to ship just under 7,000,000 bbl. of oil to Germany in 1940. Reported tankers have so far taken less than 2 per cent of this volume to western ports on the Black Sea, whence transportation to Germany has been effected by rail. The opening of the Danube may stimulate this traffic.

Many familiar with German fields doubt that the admittedly optimistic estimated output of 11,750,000 bbl. for 1940 can be obtained even under the present urgent requirements, but at the same time it is conceded nothing is known outside a small group in Germany what exploration developed in 1939. It is generally known that approximately 100 exploratory wells were drilled in Germany last year and rumors have circulated that satisfactory results were obtained in several. The production figure of 14,450,000 bbl. given as the probable total of synthetic efforts should be qualified by stating that this is based on the 1938 output. Chancellor Hitler's reference to 10 new plants under construction at the start of 1938 is thought to refer largely to the smaller type of Fisher-Tropsh systems scattered over wide areas as a precaution against air attack. However, it was reported before the war that expected production of synthetic mineral oil (including all types) would increase to 17,500,000 bbl. by the end of 1939.

War Indirectly Affects California Oil Market

By L. P. STOCKMAN

LOS ANGELES, Calif., May 20.—The war has had very little direct affect on the California oil industry up to the present and, except for border-line trade, there is no tangible evidence to indicate developments in the immediate future will improve local conditions. To date, resulting benefits have been more or less of an indirect nature. The war has stimulated local domestic consumption to the extent that large financial expenditures of the United States, Great Britain, France, Finland, and other European nations, on the Pacific Coast, principally southern California, for airplanes and plane parts has resulted in larger purchases of fuel oil and diesel oil by railroads and motor carriers as well as increased consumption of aviation gasoline. With the California aircraft industry working three shifts, 24 hours a day, industries supplying raw material and engines have shown increased production which necessitates larger consumption of fuel oil, lubricating oil, gasoline, diesel, and other petroleum products.

The backlog of business held by California aircraft manufacturers has reached the highest point ever attained and employment is at the peak. Many independent machine shops have been awarded contracts for fabrication of parts. This has become an important factor from the standpoint of increased consumption of refined oil, both from a pleasure and business standpoint.

In the border-line trade, supplied by one or more competing oil-producing areas, California marketers have benefited slightly by increased business on the west coast of South and Central America. Restrictions placed on Norwegian vessels by British authorities, however, have hindered this trade. One California marketer found it necessary to charter Japanese tankers to make deliveries in Panama, the Canal Zone, and Chile at charter rates running as high as $1.65 per barrel.

Heretofore, most of this business along the west coast of South America has been supplied from Venezuela but increased import allotments into the United States, in accordance with trade agreements between Venezuela and the United States, and sales of Venezuela crude and refined oil to the Allies has permitted California marketers to nibble at some of this border-line business with varying success in Chile and elsewhere in that area. Shipments of California crude oil to Canadian markets have been accelerated. Restricted travel and the limitations placed on shipping operations under provisions of the Neutrality Act have greatly reduced the market for bunker fuel on the Pacific Coast and in the Canal Zone where most Pacific Coast marketers maintain bunkering facilities. The sale of vessels and transfer out of the Pacific trade has also severely reduced bunkering operations at California ports. Since the declaration of war, 46 Pacific Coast vessels of 196,021 gross tons have been transferred from American to foreign registry and moved away. In addition to these foreign sales, shipowners have diverted their vessels from ordinary routes to the more highly profitable overseas service, carrying war goods to European ports.

Charter rates for both clean and dirty bottoms which have risen steadily for more than a year have retarded or prevented increased shipments of California petroleum to Central and South America. In addition to prevailing high charter rates, there is a distinct shortage of bottoms. Shipowners have been holding out for top prices even to neutral ports and in several instances tankers left California ports in ballast to Curacao, Netherland West Indies, and other ports rather than accept lower rates. Most tank ships that have been available for charter, from time to time, carry Norwegian registry and the British action has reduced sailings.

Illinois Discoveries Not Equaling Drop

By HARRY F. SIMONS

WITH a market and pipe-line outlet for 450,000 bbl. daily, production in the Illinois basin is lagging behind, results of drilling in the area not being sufficient to offset the decline in the output from the Devonian lime in the Salem pool. Strengthening the marketing picture is the fact that the discoveries as a result of wildcatting so far this year have been neither numerous or large, all of the jump in production in the past 6 months being due to the Devonian development in Salem and Centralia townsite fields. Production last week, however, was at its highest point in 7 weeks.

A potential shortage of Illinois crude has resulted in a reduction of about 3 per cent in the amount of crude oil going under the market price and an increase in the amount of oil being run from the old fields on the eastern side of the state. Failure of the wildcatting campaign to uncover new large fields will result in a critical point being reached in Illinois where supply will not be equal to demand before many more months. The expectation of a decrease in Devonian is reflected by the fact that seven wells were completed in the upper horizons in the Salem pool during the past week; also that many of the wells producing from the upper zones which were temporarily shut in to make room for Devonian production have been put back into operation.

Wildcat drilling was sustained during the winter and spring and at the present time there are over 130 outpost tests. So far there have been 14 discoveries, including extensions in area or new pay horizons in fields already enjoying development. Nearly all of the discoveries have been in the southeastern part of the state, White County enjoying five discoveries and one extension to a discovery; Wabash County showing two discoveries and Edwards, Gallatin, and Hamilton counties showing one each. Other discoveries were located in Richmond, Jasper, and Montgomery counties.

The most important pool discovered this year based on development to date is the Irons pool in Sections 24 and 25-6s-8e, White County. The pool was opened by J. W. Carter and others' No. 1 Johnson, SW NW SE Section 25-6s-8e, which obtained 635 bbl. daily at 2,485 ft. from the Hardinsburg sand, the highest producing member of the Chester series to date. Recently W. C. McBride, Inc., obtained McClosky production from its No. 1 Rainey, SE NE SE Section 24-6s-8e, after the well missed the Hardinsburg pay. Dry holes limit the Hardinsburg pool on the northeast and southwest. At present there are 18 oil wells in the field with reserves estimated at 1,000,000 bbl., at the present state of development. Average sand thickness in the field is 22 ft. and average initial production is 400 bbl.

Noah & Morrison opened a fairly good field in Section 24-2s-10, Edwards County, with the completion of the No. 1 Prudential Life Insurance Co., SE NE NE, for 145 bbl. through 11/32-in. choke from the McClosky at 3,130-36 ft., late in March. Gravity of the oil was 40.5°. The field, designated as the Albion pool, now has both McClosky lime and Waltersburg sand production and in addition Jarvis Brothers and Marcell's No. 2-A Harry Wick, in the 24-2s-10, recently reported saturation in the Bridgeport sand at 1,550 ft. There are now five wells in the field, three in the McClosky and two in the Waltersburg, which gives it an estimated reserve of 350,000 bbl.

Two successful wildcats in Wabash County may be extensions of the Mount Carmel pool. One is the Delta Drilling Co.'s No. 1 Udder in SE SE NE Section 17-1s-12w, which recovered 19 bbl. of oil from the Cypress at 2,014 ft. when it was completed late in January and the other is Mode Brice and Lacey's No. 1 Kenett, SE SW SE Section 19-1s-12w, which made 40 bbl. from the McClosky at 2,368-72 ft. when completed March 1.

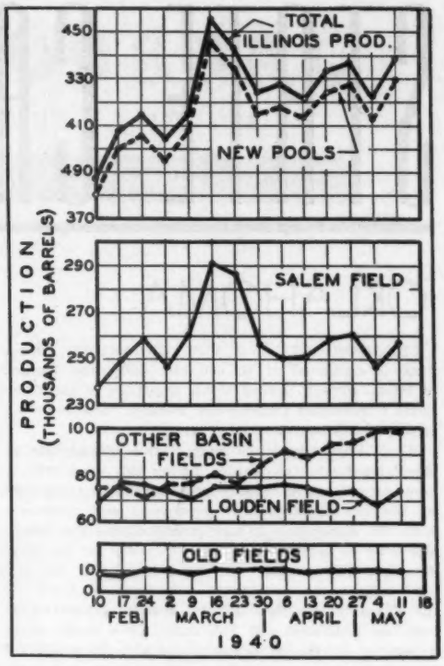
West of the old Allendale pool in Wabash County, Riddle and others completed the No. 1 Seibert, NE NE NE Section 4-1-13w, in the McClosky lime at 2,686-2,743 ft. for 500 bbl. daily. To date there have been no additional wells completed in the field. The pay in the discovery was in four streaks and totaled 18 ft.

Two Counties Enter Productive List

Two of this year's discoveries gave the counties in which they were located their first oil production. The Pure Oil Co.'s No. 1 Warren Consolidated, E½ NE NW Section 33-6-10, Jasper County, was completed in the middle of March for 350 bbl. through 1-in. choke from the McClosky lime at 2,822-28 ft. Kingwood Oil Co.'s No. 1 Wilson, NW NW SE Section 6-6s-7, Hamilton County, made 120 bbl. from the Cypress sand at 2,672 ft. to open the Dale pool which promises to be fair-sized area although development to date has been limited. There are now four wells with an average initial of 290 bbl. each. The new Jasper County field has had no additional development and is called the Boos pool.

Three other discoveries in White County have varying importance. Bishop and others completed No. 1 Griffin, SE SE SW Section 28-3s-9, for 103 bbl. from the McClosky lime at 3,468-88 ft., the latter part of January. The well is approximately 7½ miles east of the Mill Shoals field and a mile south of the Walker pool. Two wells have been added since the discovery. W. F. Fortner and others completed No. 1 Calvin, NE NE SW Section 9-4s-14w, for 120 bbl. from the Bethel sand at 2,706-23 ft. The well is south of the Calvin pool which was discovered last year as a McClosky producing area. The single additional completion produced 22 bbl. of oil and 8 bbl. of water. Sun Oil Co. gave the New Harmony field McClosky production when it completed its No. 1 Greathouse, SW SE NW Section 4-5s-13w, for 240 bbl. at a depth of 2,903-07 ft. The field was already producing from the Waltersburg at 2,150 ft. There are now 12 Waltersburg and seven McClosky wells in the pool.

The other two discoveries of the year were not impressive. Dyson & Anderson's No. 1 Ash, NW NW SW Section 18-4-10, Richland County, produced 58 bbl. from the McClosky at 2,929-39 ft., early in April to extend the North Noble field. Colback's No. 1 Duffey, NE NW NW Section 25-8s-9, Gallatin County, was completed for 8 bbl. from the Rosiclair lime. The well is northeast of the Junction pool.



Trends in Illinois production reveal effect of Devonian drilling in Salem and Centralia

Some notable failures have been completed recently, including Carter Oil Co.'s attempt to find production on the Mattoon block in Coles County with its No. 1 Seaman, NW NE SW Section 35-12n-7e. The well tested the St. Peter and found a small amount of oil in the St. Louis lime at 1,966 ft. while plugging back. A second test will be drilled to more adequately test the St. Louis lime. The same company failed on an outpost between the Dix and Salem fields in Marion and Jefferson counties, respectively, when its No. 1 Prather, in SE NW SW Section 28-1n-2e, was abandoned after drilling to 2,313 ft. Kingwood Oil Co.'s No. 1 Martin, NW SW NE Section 13-7s-8e, cored dry Devonian lime, drilled to a total depth of 5,200 ft. and was plugged back and testing. Gulf Refining Co.'s No. 1 Brandon, NW SE SE Section 1-10n-5w, Montgomery County, was abandoned at a total depth of 2,523 ft.

There has been a growing tendency since the discovery of Devonian production in Marion County to drill wildcat wells in the state to that formation or deeper before abandonment. This delays reporting the holes as dry in the upper formation until after the lower pays have been tested. There are several such wells in that class.

The dearth of success in the wildcatting campaign would not loom as so important if it were not for the fact that many of the tests have been located on or close to what have been previously considered as very favorable structures. Many of the recent tests have been located by seismograph, core drill, torsion balance or gravimeter surveys or a combination of these methods.

In the meantime the Salem field, which had a production of 291,000 bbl. during the week ending March 16, has dropped back to 257,422. During that period, 203 additional wells have been completed in the pool. The daily average production of the field fluctuates with completions, going up when a number of wells are completed in virgin territory in one week and going down when the week's completions include a number of wells in territory already developed.

STATE CAPITALS...

OKLAHOMA

CRUDE-OIL DEMAND FOR OKLAHOMA during June is estimated at 408,600 bbl. daily, the Bureau of Mines advised Reford Bond, chairman of the Oklahoma Corporation Commission Monday. This is an increase of 500 bbl. daily over May.

W. J. Armstrong, chief conservation officer, was to check purchasing companies during this week with a view to determine what changes could be expected. At the last conference of purchasers and producers with Mr. Armstrong, it was proposed that the state's allowable be pegged at 408,100 bbl. daily for the May, June and July period.

"I believe the purchasers will want to stand on the May allowable figures," Mr. Armstrong said. "Anyway, an additional 500 bbl. daily wont make much difference in the allowable. If you remember, we have been underproduced a couple of times in the last year."

LOUISIANA

IN LINE WITH THE NEW ECONOMY PROGRAM of Governor Jones, B. A. Hardey, Louisiana conservation commissioner, announced May 20 dismissal of 148 department employes, effecting a savings of $187,580 in yearly salaries.

More intensive development of the state's oil lands is planned by Conservation Commissioner Hardey. An estimated 300,000 acres, located in coastal Louisiana will be explored by state geological activity in order to determine more nearly their actual leasing value.

In addition, an investigation into the methods for developing existing oil fields on state lands will be carried out to determine whether conservation and maximum ultimate recovery can be expected. Closer cooperation between the revenue and conservation departments to better collaborate on oil-severance taxes will also be effected.

A THOROUGH INVESTIGATION of the Conservation Department was proposed in a resolution introduced to the senate at Baton Rouge last week, calling for a five-member legislative investigating committee which would have the power to employ accountants and auditors, inspect all department records and compel attendance of witnesses.

OIL-STATE GOVERNOR . . .

SAM HOUSTON JONES, governor of Louisiana, who recently took office, succeeding Earl Long. Governor Jones appointed B. A. Hardey as conservation commissioner of the state and the latter at once began sweeping economies in his department

TEXAS

TEXAS' OIL PRODUCTION DURING JUNE will be held within the estimated market-demand figure of the Bureau of Mines, members of the Texas Railroad Commission assured operators at the state-wide hearing in Austin on Monday. Operators in attendance were almost unanimous in their approval of such action, but were likewise unanimous in dissenting that a 90-day order covering June, July and August should be issued at this time. Members of the commission openly advocated such a 90-day order, but most of the operators felt that the European war made it impossible to predict what the demand would be a few weeks from now. If it were not for the present conditions, though, the 90-day order would be most welcome as a stabilizing influence, the majority of operators opined.

The daily average market demand for Texas crude during June was placed at 1,344,600 bbl. by the Bureau of Mines, or an increase of only 400 bbl. daily over the current month. Since daily average production during this month is expected to be in the neighborhood of 1,360,000 bbl. daily, to some extent due to the 1-day shutdown, the commission will be faced with either ordering additional production holidays or enforcing a horizontal cut.

FLUCTUATION IN COASTWISE TANKER shipping rates may be a contributing factor to the present unrest in the oil industry, according to Col. Ernest O. Thompson, member of the Texas Railroad Commission.

Colonel Thompson, former chairman of the Interstate Oil Compact Commission and member of the state agency which regulates production in Texas, asserted tanker rates last summer were as low as 14¾ cents per barrel of oil and in February had risen to 73 cents a barrel. A month ago, he said, they were 53 cents.

"During that period," he said at a commission meeting, "Illinois oil was replacing Texas oil and if companies which owned tankers wanted to equalize the price they could raise tanker rates. The cost of transportation is a vital part of oil prices."

The commission pointed out that coastwise shipping was not regulated by governmental agency and called attention to an investigation of tanker rates being conducted by a congressional subcommittee.

Colonel Thompson declared it was his understanding operating costs of tankers were between 20 and 21 cents per barrel of oil.

A SECOND HEARING on an injunction sought by the state against East Texas oil companies to halt pollution of the Neches River system was ordered for May 23 by Judge John A. Rawlins in the 116th District Court.

Ninety new defendants who were named in a second amended petition filed by Atty. Gen. Gerald Mann have been ordered to appear and show cause why an injunction should not be issued to prevent the wholesale dumping of salt water into the river system.

The state intends to work out an agreement to halt the pollution without resorting to injunctive relief, as with the 55 original defendants in the suit, Judge Rawlins indicated after a conference with Asst. Atty. Gen. Hugh Buck of Austin.

With one or two exceptions, the agreements with the original defendants have been carried out, and means of disposing of the waste salt water found by engineers, it was learned.

Beaumont, Port Arthur and Port Neches intervened in the original suit, claiming the salt water is a menace to their public water supplies.

KANSAS

A STATE-WIDE HEARING to receive purchase nominations for June, July and August will be held at Wichita Saturday forenoon, May 25, by the Kansas Corporation Commission. The hearing will be at the Lassen Hotel.

Purchaser's demand for Kansas crude oil for June is expected to be as high or higher than the pipeline companies indicated by their nominations submitted to the Corporation Commission late in February for the spring months. At that time the purchaser demand was indicated as being 180,000 bbl. per day or more. Owing to a piling up of stocks due to overproduction, Kansas and Oklahoma commissions agreed to hold production to the Bureau of Mines figures which were considerably below the indicated purchaser demand.

KANSAS WILL MAKE ANOTHER ATTEMPT within a few weeks to regulate production of one of its major resources—natural gas—in this state's portion of the world's largest known gas reserve.

The Hugoton field is the most developed portion of the huge reserve, the boundaries of which are not exactly established. It is thought to extend into Oklahoma and some engineers say the underground flow may reach all the way into Texas to connect with the West Texas Panhandle gas field.

The Corporation Commission is expected to issue a schedule of allowables on the Hugoton production late this month or the first of next. It will be the first order under the present commission.

Attempts by a previous commission to apply the first Hugoton proration order in September, 1938, were frustrated by legal entanglements and litigation.

Industrial promoters are concerned with the possibilities of the western producing area, which engineers say contains 13 trillion cu. ft. of gas. Under proper conservation methods, state officials contend, the reserve probably is good for 50 to 100 years.

CALIFORNIA

THE CENTRAL COMMITTEE of California Oil Producers, official curtailment group, will be confronted with a new problem when it meets this week to set the allowable daily production for the month of June due to the action of the Union Oil Co. and others in meeting the crude-oil price cut posted by Standard Oil Co. last February. Most of the marketing companies have been paying higher prices for crude oil in an effort to stabilize general marketing conditions but finally gave up the attempt and met the Standard's quotations. In effect this means a cut in crude-oil prices as Union, General Petroleum Corp., Texas Co., and Shell have been paying for crude on the old schedule. New prices for crude oil went into effect May 18. The Central Committee will undoubtedly keep production down to its present maximum as any increase under present conditions would seriously jeopardize any stability that might remain. The California curtailment program is approaching a serious crisis as the competitive condition of the refined-oil market may cause a general breakdown unless caution is used.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Prepared

The president in his message to Congress last week forcibly called attention to the need for greater military preparedness in this country.

Reflecting the changed viewpoint brought about by recent developments in European warfare, the president placed special stress upon the need for an enlarged and more efficient air defense.

Statements credited to official Washington and elsewhere reveal that there is a lack of information as to the ability of the oil industry to manufacture motor fuels that would be necessary for an enlarged air force.

There is no excuse for this confusion, as the information required could have been obtained from the Government's own records, based upon reports regularly made by refiners to the governmental bureaus.

These reports show that the production of aviation gasoline in this country since the first of the year has been about 850,000 bbl. monthly. The domestic consumption by all our airplanes, used for civil or military purposes, does not exceed 300,000 bbl. monthly. Exports, which have varied widely, have averaged approximately 200,000 bbl. monthly.

This leaves a large excess, most of which is used as blending material in the manufacture of premium motor fuel for cars. Competent investigators have stated that the production of aviation gasoline can be very quickly increased to supply all the airplanes in the world, if such a market was available to American refiners.

As every operator knows, the present production of aviation gasoline can be doubled or tripled within a short time through the installation of the necessary processing equipment, if there should be a demand for the product.

Modern methods in refining gives wide flexibility in the manufacture of these aviation fuels. Every major development in distillation practice in recent years has been toward the refining of gasolines which are higher in antiknock rating and which have the volatility necessary for operating under all conditions.

In fact, buyers of premium gasoline for their cars in this country are obtaining a better motor fuel than that available to a large proportion of the airplanes now being operated in Europe.

Technologists agree that only a start has been made in this trend toward improved fuels. New methods of processing are now being developed to commercial stages that within a few months could make available a gasoline of the highest quality.

Apropos of this situation, Dr. Egloff, addressing a national meeting of chemists Saturday, said: "Aviation gasoline of 100 octane or higher can be produced in the United States in quantities to supply the airplane needs of the world for civil or military uses."

Those who are to direct the aviation program in this country need have no fear of the ability of the oil industry to provide suitable motor fuel and oil in whatever quantities and at whatever points they are needed.

The oil industry's preparedness for war, of course, does not stop there. Its present fuel-oil output is several times greater than the needs of an enlarged navy. The requirements of motorized forces, vastly extended, would be but a fraction of the petroleum products now being supplied to the consumers of this country.

The developments in Europe with the resulting hysteria among the uninformed should not be permitted to obscure this fact. As President Skelly said at the opening of the exposition Saturday: "Without subsidies, coercion, or governmental financing, the petroleum industry is ready, equipped, and willing to duplicate its successful and patriotic effort in the first World war."

Continental Enlarging Compression Facilities in K. M. A. Field

WICHITA FALLS, Tex.—In order to handle the increasing volumes of natural gas being returned to the deep pay, Continental Oil Co. for the second time this year is enlarging its compression facilities in the K.M.A. field, North Texas. At its main plant north of the Big Wichita River, one 800-hp. angle-type unit is being installed; at its No. 1 auxiliary unit near Kadane Corner two 400-hp. units are being added; and at the No. 2 auxiliary near Valley View two 600-hp. units are being added. When the present work is completed the main plant will have a total of 2,800 hp., the No. 1 unit 1,600 hp. and the No. 2 auxiliary 3,600 hp.

Following installation of dehydration units at Continental's three plants and Phillips Petroleum Co.-Sunray Oil Co.'s plant earlier this year the volume of gas injected to key wells has rapidly increased. In March some 47,000,000 cu. ft. of gas was returned to the deep pay, and in April the total volume was increased to over 100,000,000 cu. ft.

Estimate of June Demand Shows 1 Per Cent Gain

WASHINGTON, D. C., May 20.—The Bureau of Mines estimates the daily average requirements of domestic crude oil to meet the June demand would be 3,620,300 bbl., a gain of 1 per cent over May.

The bureau reported daily average crude-oil production and runs to stills during the April 7 to May 4 period were 3,809,000 and 3,540,000 bbl., respectively. Domestic crude stocks increased on an average of 227,000 bbl. daily, while runs were 15,000 bbl. daily more than the bureau estimated, resulting in an 800,000-bbl. increase in gasoline stocks.

Domestic demand for fuel oil was estimated at 53,200,000 bbl., up 7 per cent over the June 1939 demand.

Exports were estimated at 2,400,000 bbl. or 400,000 less than for May and about half of the actual June 1939 exports.

Tide Water Associated Co. Buys Bellevue Properties

SHREVEPORT, La.—Tide Water Associated Oil Co. has purchased 14 wells and 1,600 acres of land in the Bellevue field of Bossier Parish, North Louisiana. The added holdings in the shallow pool will be incorporated into the company's plan for repressuring the oil horizon and increasing production of the premium crude. The purchase was made from Lodwick Lumber Co. and the Commercial National Bank of Shreveport. Consideration was reported to be $15,000 in cash and $45,000 in oil.

Halliburton Fellowship for Research at Norman

Announcement is made by Dr. Homer L. Dodge, dean of the graduate school of the University of Oklahoma, of the founding of a research fellowship by Earle Halliburton, president of Halliburton Oil Well Cementing Co. of Duncan, Okla., for furthering research in the Southwest and in the research laboratory of his company, directed by Hayden Roberts.

The Halliburton Research fellowship will be financed through an annual gift of $1,000 from the company, of which $750 will constitute the stipend and $250 will be for special equipment and supplies. The fellowship will be administered by the dean of the graduate school in cooperation with the donor and his director of research.

The first project will be the spectrum analysis of oil-well brines and similar solutions, under the direction of Dr. J. Rud Nielsen, professor of theoretical physics. The solutions will be used because they are characteristic of the different strata and thus give a clue to underground structure. R. C. McReynolds, research chemist of the Halliburton company, will spend a part of his time in Norman to collaborate in the research. Spectrum analysis is the fastest and most sensitive method of detecting and measuring amounts of chemical elements as small as one ten-millionth of an ounce. Mr. McReynolds, from experience in California, had become convinced of the value of this type of analysis to the oil industry.

The work will be done with two spectrographs built a few years ago by Dr. Nielsen and N. E. Ward, research fellow in physics, and with a microphotometer built by Dr. F. W. Crawford, formerly instructor in physics and now research physicist with Phillips Petroleum Co. Dr. Nielsen has recently completed a large liquid-prism spectrograph for fundamental research on molecular structure.

The spectroscopic work will be correlated with electrolytic data obtained with a micropolarograph recently purchased by the Halliburton company. This instrument has been developed in the last few years by the Czechoslovakian chemist, Heyrovsky.

The method of spectrum analysis can also be used for detecting metallic elements in plant and animal tissues. Dr. Nielsen has for several years had the plan of making such analyses available to the university school of medicine and other agencies of the state. The Halliburton Fellowship will make this possible.

Unit Rig & Equipment Co. Buys Shops in Tulsa

Announcement has been made by Unit Rig & Equipment Co., of which Hugh S. Chancey and William Guier are principals, of the purchase of the shops and property of Oil Well Supply Co. located between Denver and Elwood on Archer Street in Tulsa. This is an entire city block extending to the Frisco tracks. Mr. Chancey stated the development of a more complete line and increase in personnel made it necessary to expand manufacturing facilities. For several months it has been necessary to run the plant continuously on a three-shift basis. Unit Rig & Equipment Co. manufactures a complete line of modernly designed drilling and well-servicing equipment. William Guier is chief engineer and responsible for many of the improvements in design and inventions of various patented accessories used on the machines.

California Gasoline Pool Passes Out of Existence

LOS ANGELES, Calif.—The socalled California gasoline pool whereby large marketers purchased surplus gasoline of smaller refineries and which last year led to a grand jury investigation and subsequent indictment, passed out of existence May 16 when previous large buyers indicated they would no longer participate in purchases because of the recent decision of the U. S. Supreme Court.

This drastic action will leave a number of smaller refiners without an outlet for gasoline production. Previous situations of this nature have invariably resulted in gasoline price wars and there is nothing to indicate the present situation will be any different.

U. S. Aviation Gasoline Can Supply World, Says Egloff

In accepting the medal awarded by the American Institute of Chemists for outstanding service to the science of chemistry and to the chemical profession, Dr. Gustav Egloff, director of research, Universal Oil Products Co., speaking at Atlantic City Saturday, said:

"Military airplanes in 1928 used gasoline of about 60-octane rating while 3 years later the standard army aviation gasoline was 87 octane. Airplane engines were developed to utilize this fuel which gave a 33 per cent increase in power per unit weight compared to 60-octane gasoline. Engines designed for using 100-octane gasoline produced 30 per cent greater power output compared to 87 octane, while takeoff distances were reduced 20 per cent and climbing speed increased 40 per cent. For transport planes, the advantage of 100-octane over 87-octane gasoline in a 1,400-mile flight would be dispensing of 1,200 lb. of gasoline and carrying instead seven more passengers, or their equivalent weight in mail or freight.

"Leadership in aviation gasoline, with higher speeds and comfort of airplanes, rests in the United States. Aviation gasoline of 100 and higher octane can be produced in the United States in quantities to supply the airplane needs of the world, for civil and military use."

Patman Bill Hearings Are Brought to Close

WASHINGTON, D. C., May 20.—Extended hearings on the Patman bill to place heavy taxes on interstate chain stores came to a close last week, featured by the opposition of the Department of Commerce to the bill. Earlier the Secretary of Agriculture had denounced the proposed legislation. Last week oil companies asked the House committee conducting the hearings to exclude filling stations from the provisions of the bill, which is conceded faint hope of passage.

THE MARKETS*

CRUDE OIL: An increase of 14,669 bbl. per day in the production of the United States last week brought the total daily average up to 3,845,683 bbl. Illinois showed a slight decline in total production, but the largest field, Salem, fell off over 9,000 bbl. a day. Texas production showed little change, but Kansas increased nearly 16,000 bbl. per day.

REFINERY: Gasoline unsettled in all areas, with California especially feeling the effect of the Supreme Court decision in the Madison cases. Interrefinery buying abandoned by apprehensive independents in that state and outbreak of price cutting expected. Need of outlets for gasoline accumulation at Gulf Coast increasingly acute. Mid-Continent bright stocks and neutrals lower; but foreign inquiries, first tangible sign of long-expected export buying, stir interest. Kerosene and tractor fuel firm.

TANK-WAGON AND POSTED DEALER: Gulf Refining Co. cutting tank-wagon prices of gasoline at various points in North and West Texas to meet local competition. Standard of Indiana reduced tank-wagon price in Decatur, Ill., 1½ cents and its dealer price ½ cent in Grand Rapids, Mich.

FINANCIAL: Oil shares tumbled to new lows for the year under selling pressure that demoralized the entire market. The group of issues used for index purposes closed 4.51 points below the figure of the previous week. Average of 30 representative stocks for week ended May 18: High, 26.39; low, 21.65; close, 22.04. Week ended May 11: High, 27.42; low, 26.11; close, 26.55.

*Detailed information in market section.

DEATHS

C. L. HENTON, 78, oil operator, was killed and his wife injured seriously as their car struck a culvert, May 15, south of Chelsea, Okla. He was one of the developers of the Chelsea-Alluwe oil field and operated in Kansas.

WILLIAM E. BURDICK, 83, attorney at law and veteran oil producer in the Bradford field, died in Bradford, Pa., on May 14 after a long period of ill health.

Oil Industry Is Ready to Meet Demands for War Supplies

By HENRY D. RALPH

WASHINGTON, D. C., May 20.—The sudden turn in the European war and President Roosevelt's dramatic message requesting an additional billion dollars for national defense have altered the entire national picture and upset all forecasts as to politics, business conditions, finances, and government policies.

First reaction was that adequate defense should be provided at all cost, regardless of the state of the budget, domestic politics, or differences over future foreign policy. To this end Congress at once started to enact the necessary legislation, while leaders of industry and prominent men of all parties gave complete endorsement to the rearmament program. Observers meanwhile attempted to evaluate the effects of the new spending program and the spirit of national unity upon both business and political conditions during the next few months.

For business the defense program will mean general stimulation, for plans to spend some $896,000,000 in addition to the already large budget for the next fiscal year starting in July constitute the largest pump-priming program since the New Deal began. Much of this expenditure, of course, will be for pure armament and so will benefit largely specialized machinery makers, the steel industry, and the automobile and aircraft industries. But much will also go into plant construction, textiles, clothing, and miscellaneous equipment, so that almost every line of business will receive something of a stimulus from the defense orders.

The oil industry will be affected only indirectly by the defense program, at least for the next year or so. A general upturn in business resulting from the war orders should increase the demands for petroleum products of all kinds, and in addition the Army and Navy will be purchasing increased quantities of fuel and lubricants, particularly high-test aviation gasoline for use in the enlarged fleet of planes. Since the program calls for doubling or trebling the number of pilots in training throughout the country within the next few months it is certain the demand for aviation gasoline will rise rapidly. Army and Navy officials will make no estimate of the amount of petroleum products needed for a given number of airplanes, naval units, or mechanized infantry units, since this is felt to be more or less a military secret.

WHILE petroleum is an essential military commodity, the military experts feel the oil industry is so efficient and has such ample facilities for production, refining and distribution that no particular plans for petroleum procurement need be made at this time. The only possible prospect for a pinch is in aviation gasoline, and at a press conference this week President Roosevelt discussed the possibility that some new producing capacity may be needed. Spokesmen for the oil industry, however, point out that capacity for producing aviation gasoline has been increasing rapidly and is still well ahead of demand, and they feel the refining industry can easily keep pace with the growth of aviation production and that when the country reaches its goal of 50,000 military airplanes the oil industry will be prepared to meet the fuel demand.

The anticipated speeding up of production of airplanes, ships, tanks, rifles, and other equipment of war may provide a real strain on several branches of American industry, and bottlenecks in production may result which will hamper the activities of industries not working directly on war orders. The most prominent example is the machine-tool industry which is now operating at capacity after several years of virtual idleness. Plans are under discussion for coordinating the output of machine tools, giving priority to government orders, and training skilled mechanics, but even so there may be a shortage of lathes, milling machines, and similar equipment and this may hamper increased production of equipment for oil-well drilling and refining, since machine tools are essential in producing this equipment as well as the machinery for virtually all other manufacturing plants.

So great is the urgency that the administration is giving considerable thought to the desirability of suspending or modifying the Walsh-Healey and wage and hour laws as to essential defense industries, although there is little prospect that these laws will be suspended for business as a whole. Where new plants are needed to fill war orders, the Reconstruction Finance Corp. will make necessary loans, and thought is being given to proposals to modify the tax laws to permit companies to amortize plant expansion more equitably.

THERE is less fear of runaway price inflation than there was when the European war began last September, but a rather general, if moderate, increase in prices and cost of living is anticipated, particularly if European war orders flow in. The machinery set up by the administration last fall to keep a close check on price increases and to prevent profiteering will be continued.

Suggestions for modifying the antitrust laws to permit competitors to cooperate in the efficient filling of defense orders have sprung up but they have not met a sympathetic reaction in the administration. The probability is there will be no change in antitrust policy, but when the War and Navy departments call upon specific industries to cooperate in a plan of industrial mobilization the Department of Justice will ignore any technical violations of the Sherman Act which may be involved. As to other industries the antitrust laws will be enforced vigorously, following the strict interpretation laid down by the Supreme Court in its Madison oil decision. The Antitrust Division is bringing up to date its voluminous files on the oil industry and new oil suits may be filed in the very near future, probably of sweeping and startling nature.

Financing the huge additional defense program is considered a secondary matter, and the present disposition of Congress is to permit an increase in the debt limit rather than attempt to impose new taxes at the present session. It is a foregone conclusion, however, that new and heavy taxes will have to be imposed next year, and that these will bear heavily on both business and individuals. Prominent among proposals for additional revenue is an increase in the federal gasoline tax. In any event the budget will remain seriously unbalanced and deficit financing must be continued indefinitely with its attendant inflationary dangers.

POLITICAL observers agree that the turn of events is a break for the political fortunes of Mr. Roosevelt, and whether he decides to run for a third term the defense issue is having the effect of minimizing criticism of his domestic policies. Opposition politicians realize this fully and are now advancing the argument that preparedness requires the full confidence and cooperation of business and a Washington administration which will have the trust of business men and which will refrain from further regulations and restrictions hampering an increase of business activity. There is some reason to believe that the force of this argument is being felt in administration circles and that therefore business can expect somewhat more sympathy from Washington, a loosening of restrictive measures, and an increase in the number of business men holding executive positions in the Government.

There is a rather general demand throughout the country for a plan of close cooperation between business and Government to increase the production of all things needed for defense. This would be short of the drastic industrial mobilization plans developed by the War Department for use when the United States is actually engaged in war, but it would, of necessity, involve close cooperation between business and Government and an end to political motives and suspicions in relations between the two.

No change in foreign policy appears imminent, although many proposals are being discussed in unofficial circles. All groups are publicly declaring that the United States should stay out of the war unless actually threatened with invasion, but there is a difference of opinion as to how far we should go in enforcing the Monroe Doctrine and defending South and Central America from invasion or foreign infiltration. For example, there is the proposal that the United States should purchase or take over the protection of British, French, and Dutch possessions in and near the Caribbean, or even the Dutch East Indies. Such a step appears remote at present, but is of particular interest to the oil industry because of the petroleum producing and refining facilities of the Netherland overseas possessions.

Many details remain to be worked out as to priority of orders, method of procuring, financing new production, and similar matters, and political considerations and friction with business may again become prominent. At present, however, the outlook is for a greater national unity and a more sympathetic attitude towards the needs and problems of business than the country has seen for many years.

International

Mexico . .

Check for $1,000,000 Paid Sinclair Group

REPRESENTATIVES of the Consolidated Oil Corp. received a check for $1,000,000 May 18 from the Mexican Government as the first payment for Sinclair expropriated oil properties in Mexico.

Ambassador Francisco Najera delivered the check to Patrick J. Hurley, who conducted the negotiations, and M. L. Gosney, treasurer of Consolidated Oil Corp. The ambassador would not comment on progress of negotiations with other American companies, and did not discuss the proposed purchases of Mexican oil by the Sinclair group.

The payment is the first of nine installments of the $8,500,000 settlement. The next payment of a like amount will be made in August, the third in September, and thereafter three payments will be made in 1941 and the last three in 1942.

Praising the "friendly spirit" shown by the Sinclair interests in the negotiations, Ambassador Najera pointed out the payment showed that Mexico "can and will" deliver the agreed amount. American oil representatives have expressed doubt in the ability of the Mexican Government to pay the money.

Mr. Hurley accepted the check on behalf of Harry F. Sinclair, and expressed his appreciation for the "intelligence, good faith, and courtesy" of the Mexican officials.

Rumania . .

Exports Drop but Increase to Germany

PETROLEUM exports from Rumania in February touched a recent low of 7,241 metric tons daily (metric ton equals 7.33 bbl.), according to the April issue of Moniteur du Petrole Roumain, but the shipments to Germany increased to 20,291 tons for the month compared to 18,455 tons in January.

January and February export movement of Rumanian petroleum to Germany cannot be considered representative of the volume available to the Reich, except that the figures may presage a significant trend. The reason that January and February figures are not truly representative is that the Danube River was icebound for the entire 60-day period and was not navigable until the middle of March. Bohemia and Moravia, Reich protectorates since the invasion of Czechoslovakia, received Rumanian petroleum during January and February approximating half of the shipments to Germany proper. The combined Rumanian exports to Germany and Bohemia-Moravia were 28,246 metric tons in January and 30,778 tons in February. Considering that gasoline makes up nearly 70 per cent of the normal petroleum shipments from Rumania to Germany a conservative figure for converting metric tons to barrels would be about 8. On this basis the February exports of Rumanian petroleum to Germany totaled about 162,300 bbl., or approximately 5,600 bbl. daily.

The sharp increase in Rumanian petroleum exports to Great Britain since the war is of even greater significance than the inconsequential shipments overland to Germany. The abrupt increase in Rumanian exports to Great Britain began in December when the latter received 139,880 tons, or 33.9 per cent of Rumania's offshore petroleum shipments for the month. In January Great Britain received 118,956 tons of Rumanian petroleum, or 38.6 per cent of the total exports, and in February took 75,536 tons, or 34.8 per cent of the aggregate for that month.

In September, October and November, 1939, the first 3 months of the war, the combined receipts of Rumanian petroleum by Germany and the Bohemia-Moravia territory totaled 69,691 tons (33.8 per cent), 83,713 tons (27.4 per cent), and 88,835 tons (29.6 per cent) for the respective months.

When Great Britain became an active competitor for Rumania's exportable petroleum in December, the German and Bohemia-Moravia receipts dropped to 81,923 tons (19.8 per cent) and the decline grew in intensity during the first 2 months of this year. In January Rumania shipped 28,246 tons (9.2 per cent) of petroleum into German territory and in February the combined total of 30,778 tons was 14.1 per cent of the aggregate.

Italy practically doubled her acceptance of Rumanian oil in the second 2 months of the war—that is, for October and November compared to September of 1939, but the increase over peacetime operations was less pronounced considered in light of the average for the first 8 months of last year. Itally obtained an average of 54,884 tons monthly from January to August, 1939, but in September the receipts of Rumanian petroleum dropped to 31,492 tons, or 15.3 per cent of the total shipments against an average of 14.9 per cent for the first 8 months. Italian receipts of Rumanian oil jumped to 66,055 tons in October, 21.6 per cent of the total exports from the latter country, and held up to 63,262 tons in November, being 21.1 per cent of the aggregate.

In December, when the British set about choking off petroleum supplies to the Reich, Rumanian shipments to Italy dropped to 35,105 tons, or 8.5 per cent of the total. Italy received 31,008 tons in January and 26,497 tons in February of this year, or 10.1 and 12.2 per cent of the total exports for the respective months.

A trade agreement now exists between Germany and Rumania whereby the latter government is obligated to attempt delivery up to 130,000 tons of petroleum per month to Germany.

Russia . .

New Oil Canal Opened; Kamchatka Is Promising

OPENING of another canal designed to aid the Baku oil fields, irrigate agricultural land, provide turboelectric power, and aid transportation has been reported from Soviet Russia.

Moscow dispatches reported last week a celebration marking opening of the Samur-Divichinsk Canal, which parallels the Caspian seacoast north of Baku. The 66-mile canal will supply water, transportation, and electrical energy, by installing generators at various water levels, for the Baku oil-field region.

Last month a Russian newspaper reported that geologists had expressed their belief that Kamchatka is richer in oil than Sakhalin, the island off the east coast of Russia. Indications of oil have been found in several districts, the Moscow report said. The best prospects so far are in the Bogachev area, district of Lake Kranotzky, and Voyampol on the western coast. A special trust for the industrial prospecting of oil in Kamchatka has been created. The assembling of equipment for the first drilling test has been completed in the Tigilsk district.

Venezuela . .

Deliveries Are Begun From El Roble Field

REGULAR deliveries of high-gravity paraffinic crude from El Roble field in eastern Venezuela were to have started last week upon completion of a field pumping station serving lateral lines terminating in the main Oficina-Guanta 16-in. trunk system.

Completion of the second producer and the spudding of a third test were reported on El Roble property operated by Standard Oil Co. of Venezuela under a contract with Pantepec Oil Co. of Venezuela, C.A.

In addition to surpassing original expectations of its producing capacity Standard of Venezuela's No. 2 El Roble (Pantepec) takes rank as the deepest oil well in South America, being bottomed at 10,009 ft. No. 2 El Roble, according to a release by Pantepec (published last week), produced at the rate of 1,113 bbl. of 43.1-gravity oil per day through a 5/16-in. choke from a pay section tested between 9,348 and 9,520 ft. On another production test of an interval from 8,312 to 8,348 ft. the well flowed at the rate of 1,816 bbl. per day of 42.5-gravity crude through ½-in. choke, and during the last hour the rate of yield increased to 2,400 bbl. per day.

Standard-Pantepec's No. 3 El Roble, about ¾ mile east of the discovery No. 1 producer, was spudded last week, and location for No. 4 has been staked 1,150 m., about 3,800 ft., north and slightly east of the first well.

Completed producers on El Roble property, which covers 35,601 acres, are between 5 and 6 miles from the Oficina-Guanta trunk pipe line which serves the more extensively developed Oficina field to the south. The No. 1 discovery producer was formally completed May 9, 1939, but has remained shut in since that time awaiting pipe-line connection. The discovery first started flowing gas from an unknown sand in December 1938 when drilling had reached 9,605 ft. The well eventually escaped control and flowed 18,000 bbl. of 44-gravity oil in 5 days with an undetermined volume of high-pressure gas. After the well had been brought under control it was found that the casing had parted at about 7,100 ft. and eventually the well was redrilled to 8,222 ft. Formal completion was made in a sand from 8,117 to 8,186 ft. and production was established at 805 bbl. of 44° oil in 24 hours through a ¼-in. choke against working pressure of 3,300 lb. per sq. in.

Domestic Demand for Products In March Showed Gains

ALL records for crude-oil production were smashed in March 1940, when the daily average production was 3,873,400 bbl., according to the Bureau of Mines. This was 126,200 bbl. above the average in February and 429,300 bbl. (12.5 per cent) above the average of March 1939.

Virtually all of the gain in output in March was recorded in two states, Texas and Illinois. In Texas, the Panhandle and East Texas showed little change but the other districts recorded material gains. Production in Illinois reached a new peak of 438,100 bbl. daily, 33,700 bbl. above the previous peak in February. Oklahoma, Louisiana, and Kansas showed small gains but these were offset by a decrease in California.

Daily average crude runs to stills increased from 3,509,000 bbl. in February to 3,551,000 bbl. in March and exports picked up somewhat but this did not take care of the large increment in production so the rate of accumulation for crude-oil stocks again increased. A gain of about 6,700,000 bbl. in crude-oil stocks in March brought the total for refinable grades to 251,120,000 on March 31.

Refined products.—Although the peak demand for distillate fuel oil had passed, the yield of gasoline declined from 42.4 per cent in February to the unusually low average of 42.2 per cent in March. At the same time, the yield of light fuel oil decreased materially (from 16.0 per cent in February to 14.8 per cent in March), that of residual fuel oil showed little change, but nearly all the minor products gained. These changes indicate the difficult situation brought on by the excessive runs to stills and unbalanced yields in prior months.

The demand figures for motor fuel for March were not particularly encouraging, even though the domestic demand of 44,607,000 bbl. was 5 per cent above a year ago. Exports (2,265,000 bbl.) were barely more than half what they were in March 1939, hence the total demand showed practically no change. Gasoline stocks continued to rise to record levels; finished stocks were up about 3,700,000 bbl., unfinished another 700,000 bbl., making the total 103,710,000 bbl. on March 31.

The domestic demand for the various classes of fuel oil, including kerosene, continued to run well ahead of last year—kerosene was up 21 per cent, gas oil and distillate fuel oil 18 per cent, and residual fuel oil 9 per cent.

According to the Bureau of Labor Statistics, the price index for petroleum products in March 1940 was 50.4, compared with 50.9 in February 1940, and 50.9 in March 1939.

The crude-oil capacity represented by the data in this report was 4,370,000 bbl., hence the operating ratio was 81 per cent, compared with 81 per cent in February and 77 per cent in March 1939.

United States Supply and Demand

Three months, 1940

Crude Oil (Bbl.)

3 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	INDICATED DOMESTIC DEMAND‡	EXPORTS	STOCKS REFINABLE CRUDE MAR. 31
1940	349,071,000	336,706,000	*12,365,000	*3.7	341,883,000	7,188,000	325,131,000	11,575,000	‖251,120,000
Daily average	3,836,000	3,700,000	.....	....	3,757,000	79,000	3,573,000	127,000	.....
1939	307,829,000	305,687,000	*2,142,000	*0.7	302,733,000	5,096,000	291,434,000	14,253,000	276,355,000
Daily average	3,420,000	3,296,000	.....	....	3,364,000	56,000	3,238,000	158,000	.....
Increase, 1940	41,242,000	31,019,000	.....	....	39,150,000	2,092,000	33,697,000	†2,678,000	†25,235,000
	13.4%	10.1%	.....	....	12.9%	41.1%	11.5%	†18.8%	†9.1%

Refinery Products Motor Fuel (Bbl.)

3 MONTHS—	TOTAL SUPPLY	TOTAL DEMAND	EXCESS DEMAND	EXCESS PCT.	DOMESTIC PRODUCTION	IMPORTS	DOMESTIC DEMAND	EXPORTS	STOCKS MAR. 31§
1940	149,114,000	128,976,000	*20,138,000	*15 6	149,069,000	45,000	122,534,000	6,442,000	101,860,000
Daily average	1,638,000	1,417,000	.....	....	1,638,000	.....	1,347,000	71,000	.....
1939	140,896,000	125,765,000	*15,131,000	*12.0	140,896,000	.....	114,882,000	10,883,000	85,910,000
Daily average	1,565,000	1,397,000	.....	....	1,565,000	.....	126,000	121,000	.....
Increase, 1940	8,218,000	3,211,000	.....	....	8,173,000	.....	7,652,000	†4,441,000	15,950,000
	5.8%	2.5%	.....	....	5.8%	.....	6.7%	†40.8%	18.5%

Kerosene

1940	17,890,000	21,352,000	3,462,000	16.2	17,890,000	.....	20,178,000	1,174,000	4,114,000
1939	16,776,000	18,970,000	2,194,000	11.5	16,776,000	.....	17,082,000	1,888,000	5,605,000
Increase, 1940	1,114,000	2,382,000	.....	....	1,114,000	.....	3,096,000	†714,000	†1,491,000
	6.6%	12.6%	.....	....	6.6%	.....	6.7%	†38.8%	†26.6%

Gas Oil and Residual Fuel Oil¶

1940	138,742,000	154,997,000	16,255,000	10.5	128,788,000	9,954,000	147,056,000	7,941,000	112,437,000
1939	106,236,000	139,202,000	32,966,000	23.7	102,787,000	3,449,000	128,121,000	11,081,000	118,993,000
Increase, 1940	32,506,000	15,795,000	.....	....	26,001,000	6,505,000	18,935,000	†3,140,000	†6,556,000
	30.6%	11.3%	.....	....	25.3%	18.8%	14.8%	†28.4%	†5.5%

Gas Oil and Distillate Fuels

1940	50,056,000	62,312,000	12,256,000	19.7	49,156,000	900,000	57,211,000	5,101,000	23,080,000
1939	30,541,000	52,383,000	21,842,000	41.7	30,370,000	171,000	45,653,000	6,730,000	25,899,000
Increase, 1940	19,515,000	9,929,000	.....	....	18,786,000	729,000	11,558,000	†1,629,000	†2,813,000
	63.9%	19.0%	.....	...	61.1%	42.6%	25.3%	†24.2%	†10.9%

Residual Fuel Oils

1940	88,686,000	92,685,000	3,999,000	4.3	79,632,000	9,054,000	89,845,000	2,840,000	89,351,000
1939	75,695,000	86,819,000	11,124,000	12.8	72,417,000	3,278,000	82,468,000	4,351,000	93,094,000
Increase, 1940	12,991,000	5,866,000	.....	....	7,215,000	5,776,000	7,377,000	†1,511,000	†3,743,000
	17.1%	6.8%	.....	....	9.9%	176.2%	8.9%	†34.7%	†4.0%

Lubricating Oils

1940	9,751,000	8,809,000	*942,000	*10.7	9,751,000	.....	5,459,000	3,350,000	8,984,000
1939	7,713,000	7,609,000	*104,000	*1.4	7,713,000	.....	5,249,000	2,360,000	7,800,000
Increase, 1940	2,038,000	1,200,000	.....	....	2,038,000	.....	210,000	990,000	284,000
	26.4%	15.7%	.....	....	26.4%	.....	4.0%	42.0%	3.6%

Petroleum Wax (Lb.)

1940	161,244,000	146,609,000	*14,635,000	*10.0	145,230,000	16,014,000	71,558,000	75,051,000	90,373,000
1939	120,387,000	132,190,000	11,803,000	8.9	113,400,000	6,987,000	68,303,000	63,887,000	117,537,000
Increase, 1940	40,857,000	14,419,000	.....	....	31,830,000	9,027,000	3,255,000	11,164,000	†27,164,000
	33.9%	10.9%	.....	....	28.1%	129.2%	4.8%	17.5%	†23.1%

*Excess supply. †Decrease. ‡Crude only. §Includes finished and unfinished refinery gasoline and natural gasolines. ¶Gas oil and fuel oil equals gas oil and distillate fuels plus residual fuel oils. Note: Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products based on refinery shipments. ‖Does not include 13,485,000 bbl. of heavy oils in California. Comparable figure for Mar. 31, 1939, 15,814,000 bbl.

Crude Oil Run to Stills and Total All Oils (Bbl.)

3 MONTHS—	TOTAL IMPORTS§	TOTAL EXPORTS§	TOTAL CRUDE TO STILLS	PER CENT YIELD GASOLINE‡	NATURAL GASOLINE PRODUCTION	TOTAL SUPPLY ALL OILS*	TOTAL DEMAND ALL OILS*	STOCKS ALL OILS MAR. 31*
1940	19,332,000	31,649,000	318,375,000	42.6	12,939,000	374,894,000	355,821,000	543,843,000
Daily average	212,000	348,000	3,499,000	....	142,000	4,120,000	3,910,000	.....
1939	19,803,000	40,931,000	286,328,000	43.2	12,243,000	326,326,000	330,140,000	563,232,000
Daily average	130,000	455,000	3,181,000	....	136,000	3,626,000	3,668,000	.....
Increase, 1940	8,529,000	†9,282,000	32,047,000	....	696,000	48,568,000	25,681,000	†19,389,000
	79.0%	†22.7%	11.2%	....	5.7%	14.9%	7.8%	†3.4%

*Total all oils include crude and refined products, natural gasoline, and benzol. Stocks Mar. 31, 1940, represented 139 days' supply which compares to 154 days on the same date in 1939. †Decrease. ‡Does not include natural gasoline blended at refineries. §Includes crude oil and refinery products. In case of imports includes receipts in bond and for domestic use. All data based on Bureau of Mines reports.

The Development of Micropaleontology In California

By HUBERT G. SCHENCK, A. MYRA KEEN and LOIS T. MARTIN
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SEVERAL years ago at a meeting of the Pacific section of the Society of Economic Paleontologists and Mineralogists, a group of members discussed the place of micropaleontology among the geological sciences. One member suggested a comparison with plane-table surveying. He said that geology (including stratigraphy) is comparable to a base line; vertebrate paleontology serves as a primary triangulation net; invertebrate paleontology is a secondary triangulation system; and micropaleontology is a stadia shot. This comparison, which was an apt analogy, led to a considerable amount of discussion as to the importance of the various branches of paleontology to the other phases of geology.

After mulling over the general problem for some time we have concluded that perhaps a means of evaluating these branches might be found, in part, in a quantitative survey of literature—a survey to give a rough indication of the trends of interest among geologists and paleontologists. To be instructive, such a weather vane should not analyze the literature of paleontology alone, but should take into account other related fields of activity.

It was in this way that we were led to make an analysis of some 6,524 titles of papers selected at random from Shedd's bibliographies. We sought to discover the relative importance of paleontology in general before turning to micropaleontology in particular. Fig. 1 shows our findings.

We have classified the papers into 12 categories, arranging them according to their relative bulk; that is, in the descending order of the area which each covers on the chart. Also, we have assorted the papers by dates into 10 groups; these are by 5-year intervals except for the initial and final periods, which include 51 and 6 years, respectively. The inequality of time divisions, though convenient in equalizing the numbers of papers in each sample, necessitates comparisons by percentages instead of by actual frequencies. The chart reads as follows: During the early period, 1838-89, 24 per cent of all papers on California geology were on the topic of metals and ore deposits; during the period 1930-36, 14 per cent of the papers deal with these subjects, and so on.

It may be a surprise to some to note that paleontology—vertebrate, invertebrate, and paleobotany—ranks second in quantity of papers, being outranked only by the economic-geology field of metalliferous ore deposits. Paleontology, then, would appear to be a practical rather than a theoretical field, particularly when one realizes that papers on microfossils, written mainly for the purpose of aiding in correlations, constitute no small bulk of the literature. With its companion field of stratigraphy, paleontology has maintained a fairly consistent level throughout the past century, exhibiting a peak, however, soon after the interest in petroleum geology waxed during the late 1920's. Whatever may or may not be said of the quality of paleontological literature, so far as quantity is concerned, it has been and is important among the publications of the geological sciences.

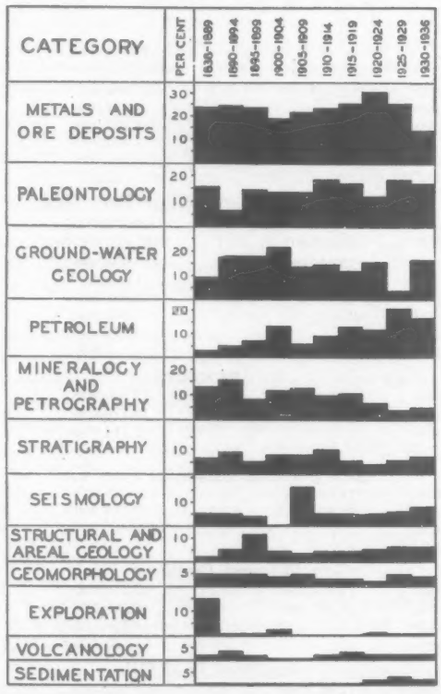

Fig. 1—The geological sciences in California: relative output of literature in 12 fields during the past century

A second means of evaluating a field of science is by interviewing its professional personnel, asking their opinions on what should be called its chief milestones of progress, its present status, and its possible future. This we have attempted to do for micropaleontology in California by sending a questionnaire to several economic paleontologists. We are indebted to the following for aiding us by their responses:

William F. Barbat, R. Stanley Beck, C. C. Church, H. L. Driver, Glenn C. Ferguson, J. D. Gilboe, Paul P. Goudkoff, James M. Hamill, G. Dallas Hanna, W. F. Holman, D. D. Hughes, Robert B. Hutcheson, George C. Kuffel, Boris Laiming, Manley L. Natland, Philip W. Reinhart, and Stanley G. Wissler.

The questions asked on the questionnaire are reprinted (slightly modified) below, with brief summaries of the most characteristic answers in parentheses. We regret that lack of space does not permit us to reproduce in full some of the more stimulating and detailed replies.

1. Who first used micropaleontology in petroleum geology in California? (E. Call Brown, in 1920-21, for the California Petroleum Corp.)

2. What was the most important step in the development of micropaleontology in California? (Improvement of the core barrel.)

3. What has been the effect of the electrical log on applied micropaleontology? (It has reduced coring and greatly diminished the use of micropaleontology in proven fields.)

4. Do field geologists use microfossils? (Yes, for defining formations and for making rough correlations.)

5. Do workers designate the more important species by their scientific names? (Yes, if the species are described; otherwise species are designated by number and referred to a key collection.)

6. What is the total annual operating cost of all the micropaleontological laboratories in California? (Approximately $350,000.)

7. What oil fields in California have been discovered with the assistance of micropaleontological studies? (Del Rey, El Segundo, Mount Poso, Rio Bravo, Santa Maria Valley, Seal Beach.)

8. Have the laboratory heads received a formal course in micropaleontology in a university? (Three out of 14.) Have their assistants? (Approximately nine from all the laboratories.)

9. Has the early work on invertebrate paleontology and stratigraphy contributed to the successful application of micropaleontology to petroleum geology? (Yes, on the whole.)

10. What is the future of micropaleontology in oil geology? (It will be variable, but probably always necessary, particularly for accurate stratigraphic zonation. It will have to supplement geophysical exploration and will help to untangle complex geological structures.)

11. Should universities continue giving specific courses in micropaleontology? (Yes.)

12. What training in the university should a micropaleontologist receive? (In order of relative importance: geology, invertebrate paleontology and micropaleontology; stratigraphy; marine biology or zoology; sedimentation; ecology. mineralogy; petroleum engineering; chemistry; mathematics; at least one foreign language; graphic arts; independent research; physics.)

Early Developments

The majority of economic paleontologists in California are of the opinion that the early work on invertebrate paleontology and stratigraphy contributed in no small way to the successful application of micropaleontology to petroleum geology. This, of course, is a general contributing factor. More specified ones mentioned were:

1. The organization in March 1927 of the Pacific section of the Society of Economic Paleontologists and Mineralogists, the monthly meetings of which are a constant stimulus to members in southern California.

2. Appreciation of the practical value of the time-stratigraphic concept, such as is expressed in Kleinpell's "Miocene Stratigraphy of California."

3. Recognition by the oil-company officials that trained micropaleontologists are an essential adjunct to successful work.

4. Detailed, foot-by-foot studies, in the laboratories of the major oil companies, of representative accurately measured and sampled sections.

5. Demonstration that in a single oil field, the sequence and relative abundance of specimens of

some species of Foraminifera may be used for detailed correlations.

6. Publication of papers on microfaunas of California, notably by such authors as Chapman, Church, Cushman and his collaborators, Galloway and Wissler, Hanna, Kleinpell, Natland, and others. These papers directly facilitated further research.

7. Most frequently mentioned and probably most significant for micropaleontology was the improvement of the core barrel. Just as one must catch the hare before one can cook it, so the fossils must be in hand before they can be studied and used; this study the core barrel makes possible. The double-barrel core drill, designed for use in loosely consolidated formations, appears to have been invented by Jan Koster, in response to the need felt by the Netherlands Geological Survey for a device for obtaining cores in localities where the diamond drill was unsuccessful. No attempt to introduce the Koster drill into the oil fields of the United States was made until 1919, when the Shell company of California obtained one and tested it on shallow exploration work in an area near what is now the Santa Fe Springs oil field.

The use of material from cores led to the recognition that refined correlations are possible by means of the Foraminifera, and this, in turn, led to the rapid development of micropaleontology in California during the optimistic twenties.

TABLE 1—DIRECTORY OF EXISTING COMMERCIAL MICROPALEONTOLOGICAL LABORATORIES IN CALIFORNIA

No.	Company—	Location of laboratory	Date established	Paleontologist in charge	Number on staff*	Average number California samples annually†	Ratio surface samples to subsurface
1.	Independent	Los Angeles	1926	P. P. Goudkoff	2-4	4,000-8,000	1:8
2.	Independent	Los Angeles		W. D. Rankin	No report	No report	No report
3.	Richfield Oil Corp.	Long Beach	1937	M. L. Natland	9	18,000	1:50
4.	Richfield Oil Corp.	Bakersfield	1937	R. S. Beck	5	6,000	1:4
5.	Shell Oil Co.	Long Beach	1924	G. C. Kuffel	8	9,000	1:20
6.	Shell Oil Co.	Bakersfield	1937	J. D. Gilboe	9	12,000	1:50
7.	Standard Oil Co.	Los Angeles	1925	H. L. Driver	4-5	No record	1:500±
8.	Standard Oil Co.	Taft	1926	W. F. Barbat	5	2,500-5,000	1:20
9.	Superior Oil Co.	Rio Bravo field	1931	R. B. Hutcheson	8	8,000	1:10
10.	The Texas Co.	Los Angeles	1929	J. M. Hamill	8	35,000	1:20
11.	Tide Water Associated Oil Co.	San Francisco	1923	G. D. Hanna	3	5,000±	1:5
12.	Union Oil Co.	Dominguez		S. G. Wisaler	16	No report	1:10
13.	Union Oil Co.	Bakersfield	1935	G. C. Ferguson	6	14,800	1:10
14.	Union Oil Co.	Orcutt	1934	F. E. Dreyer	2	No report	No report

*The number of the staff of the laboratory includes the paleontologist in charge; as of Feb. 17, 1940.
†This column gives an estimate of the total number of samples from California handled and examined in the laboratory annually.

TABLE 2—DIRECTORY OF ABANDONED COMMERCIAL LABORATORIES IN CALIFORNIA

Company—	Location of laboratory	Date established	Date abandoned
Milham Exploration Co.	Los Angeles	1924	1928
Pacific Western	Los Angeles	1928	1931
Shell Oil Co.	Sacramento	1936	1937

Appraisal of Value

In the early days of micropaleontology, opinions were divided regarding its true merit. One school of thought held that the subject was going to be highly specialized, open only to a few, and of limited practical application. An opposite school held that micropaleontology would revolutionize the petroleum industry, proving a panacea for its ills. The former group were the conservatives, who were wary of what they thought was an innovation as ephemeral as a passing comet. The latter comprised those progressives and ultraprogressives who were carried away by enthusiasm for what they believed was a new and fertile field of paleontology.

Today, one who is impartial is forced to conclude that there are elements of truth in both schools. Few would dispute the assertion that micropaleontology is a specialized branch of science and that its value is not unlimited. It is likewise an established fact that the small fossils have played a useful role in the petroleum industry; no one now denies the value of Foraminifera as guides during drilling for oil and in geological mapping. They often permit a degree of accuracy in correlation, especially among fine-grained sediments, which is impossible with any other organic or inorganic criterion. The use of microfossils may prevent premature abandonment of wildcat wells and may assist in intelligent oil-field development. But, while the small fossils are useful in petroleum geology, they have not caused a revolution in the industry. The basic principles of geology, ecology, and paleontology must still be understood and applied.

Perhaps because of a sudden and bitter realization of this fact, some California geologists twice have proclaimed, prematurely, the imminent demise of micropaleontology. The first time was when all in the profession were forced to the awareness that ecology cannot be neglected in using fossils for synchronization of strata from basin to basin. Yet it is now realized that within the same local basin correlation by identity of depositional environment is for all intents and purposes a chronologic correlation. The second time was when electrical logs were demonstrated to be reliable means of intrafield correlation. The period of optimism which began in 1919 with the discovery that Foraminifera were of service in correlations came to an end about 1930 and was replaced by a period of more mature outlook.

It was thus an important milestone when the previously overoptimistic workers began to utilize fossils as one—but only one—of several tools in the synchronization of strata. The introduction of geophysical aids in subsurface mapping initiated a new era in which the economic paleontologists must master a multiple technique. There seems to be no prospect that the electrical log, however useful it is, will entirely replace micropaleontological criteria, especially in field-to-field correlations and in allocating strata in wildcat wells to their proper place in the column. The following quotation from a letter by Glenn C. Ferguson (dated Feb. 12, 1940) is an excellent illustration of how micropaleontology still supplements all other correlation devices:

"Almost any field discovered nowadays is the result of the combined efforts of geophysicists, geologists, and micropaleontologists; all lend a cooperating hand. For example, the discovery of the Rio Bravo field was in part the result of a geophysical study of the area which located the structural trend. The well was drilled with the Stevens horizon as the objective. When this sand was found to be absent, the well prospected ahead on general principles for a few hundred feet or so. Paleontological study of the cores indicated 2,000 ft. or more of beds were absent as compared with the normally complete sections. Thus it was recognized that sands correlating with the Vedder sands on the east side of the San Joaquin Valley were within reach of the drill. There can be little doubt that micropaleontology played an important part in the ultimate discovery of the productive sand at Rio Bravo, as did the geophysical study and geological interpretations."

Micropaleontology in 1940 seems to be stabilized as an integral part of the petroleum industry. In California 14 laboratories operate daily, as shown in Table 1, a directory of existing commercial micropaleontological laboratories. The annual total cost of their combined operations, including salaries, doubtless exceeds $350,000 a year. The magnitude of the work accomplished may be judged from the fact that more than 100,000 samples are handled annually. These laboratories exist because they have proved the value of micropaleontology to petroleum geology.

Future Prospects

What of the future? All correspondents agree that the electrical log has reduced the amount of coring and has abridged the use of paleontology in oil-field development. While one reply frankly viewed the future of micropaleontology as "dark," the majority were not so pessimistic. Many believe that applied paleontology has reached and passed its peak, though admitting that there will always be a call for a limited number of micropaleontologists. All agreed that the micropaleontologist of the future must have a thorough training in geology, mineralogy, and general invertebrate paleontology. Most economic paleontologists believe that universities should continue giving specific courses in micropaleontology, though most of them recommend that it should come in the postgraduate years. Parenthetically, it may be remarked that some readers of this note may find food for thought in the fact that few of the present heads of laboratories were trained by universities for their specific jobs. For the more "academic" side of micropaleontology the future seems bright, as scores of faunules are awaiting description, paleobiological investigations offer tempting possibilities, and biostratigraphic research will doubtless yield significant results. Finally, at some time in the future scientists will awake to the realization that economic paleontology has contributed enormously not only to commercial activities but also to science in general, and with that awakening should come greater emphasis on microfossils outside of the oil industry.

Selected Bibliographic References

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Pipe-Line Activity

Plans Complete for New Line From Lance Creek Field

CASPER, Wyo.—Plans have been practically completed for another outlet for Lance Creek, Wyoming, crude through the construction of a pipe line from the field in a northeasterly direction to the town of Newcastle in Weston County. The project will be built by A. B. Cobb, of Cut Bank, Mont., an independent operator who has considerable production in Lance Creek, jointly with Yale Oil Corp., which operates a number of refineries in Wyoming and Montana, and distributes its products in part through its own retail outlets. Mr. Cobb will operate the pipe-line properties, although the Yale company will have a 50 per cent ownership interest.

Present plans call for a 4½-in. line from Lance Creek to Newcastle with a lateral from the Mule Creek field to a junction with the main line, a total of 75 miles. It is possible a decision to change to a 6-in. line will be made. The total cost of the project is estimated at $175,000 and the tariff rate will be 25 cents per barrel. Approximately 1,200 bbl. daily will be run at the start, but will be increased to 2,000 bbl. as soon as the Yale company completes the enlargement of its Newcastle plant, including the installation of a cracking unit. The Yale company has contracted for crude from the Cobb wells on the west side of Lance Creek and it is reported it also has contracted for the production from the C. L. Price wells.

Yale Oil Corp. has a refinery at Billings, Mont., which has a charging capacity of 7,500 bbl. daily and another with 1,000 bbl. capacity at Kalispell. In Wyoming it has a 1,500-bbl. plant at Lovell which primarily produces road oil and ships the gasoline cuts to its other plants for refining. It has another small plant at Worland, and about 2 years ago it leased the Consumers Oil & Refining Co.'s plant at Newcastle. At the same time it acquired the producing properties of Albert E. Mays in the Mule Creek field. Some of its crude comes from the Osage field and additional supplies are trucked from Lance Creek. It is reported, but not confirmed, that the company is negotiating for the production of Argo Oil Corp. and Ohio Oil Co. in Mule Creek.

A.P.I. Production Division Names Pipe-Line Committee

The 1940 central committee on pipe-line transportation of the American Petroleum Institute's Division of Production has been appointed by George A. Hill, Jr., chairman of the division's general committee. C. H. Kountz, Sinclair Refining Co., Independence, Kans., is chairman of the pipe-line committee.

Two subcommittees of the pipe-line committee were appointed: The topical committee on pipe-line technology, with W. F. Rogers, Gulf Oil Corp., Houston, Tex., chairman, and the conference subcommittee on accounting regulations, with Fayette B. Dow, American Petroleum Institute, Washington, D. C., chairman, and C. H. Cleaver, Northern Group of Pipe Lines, New York, vice chairman.

Members of the pipe-line central committee for 1940 are: E. L. Adams, General Petroleum Corp.; P. R. Applegate, Buckeye Pipe Line Co.; J. A. Bartlett, Northern Pipe Line Co.; Charles Bunje, Jr., Illinois Pipe Line Co.; D. S. Bushnell, Northern Group of Pipe Lines; F. E. Coyle, Tide Water Associated Oil Co.; A. L. Dade, Deep Rock Oil Corp.; G. M. Davidson, Natural Gas Pipe Line Co. of America; Smith Day, Standard Oil Co. of Louisiana; Fayette B. Dow; J. G. Dyer, Continental Pipe Line Co.; R. S. Ellison, Stanolind Pipe Line Co.; W. R. Finney, Standard Oil Co. of New Jersey; Charles Fitzgerald, Sinclair Refining Co.; A. H. B. Gore, Richfield Oil Corp.; E. F. Guidinger, Phillips Petroleum Co.; George J. Hanks, Tide Water Associated Oil Co.; R. V. Hanrahan, Humble Pipe Line Co.; W. W. Hay, Union Oil Co.; R. B. High, Shell Pipe Line Corp.; A. N. Horne, Empire Pipe Line Co.; B. E. Hull, Texas Pipe Line Co.; E. C. Kincade, Gulf Refining Co.; J. L. Latimer, Magnolia Pipe Line Co.; R. D. McClaran, Pure Transportation Co.; R. A. Miller, Indiana Pipe Line Co.; Harry Moreland, Great Lakes Pipe Line Co.; Stuart Moser, Standard Oil Co. of California; R. W. Pack, Sun Pipe Line Co.; J. H. Peper, Indiana Pipe Line Co.; J. French Robinson, Peoples Natural Gas Co.; F. B. Simms, Shell Oil Co., Inc.; Warren Sinsheimer, Petroleum Advisers, Inc.; R. E. Sleppy, Barnsdall Oil Co.; H. R. Straight, Cities Service Oil Co.; Allen T. Towl, Southwest Pennsylvania Pipe Lines; D. O. Towl, Imperial Pipe Lines Co., Ltd.; J. W. Vandergrift, Southern Pipe Line Co.; C. R. Weidner, Sinclair Refining Co., and J. H. Wood, Jr., Atlantic Pipe Line Co.

Columbia Gas to Construct Additional Pipe Lines

WASHINGTON, D. C.—Columbia Gas & Electric Corp. has asked the S.E.C. to approve the purchase by it of $1,787,225 in short-term notes from three of its subsidiaries to enable them to construct additional gas pipe lines from West Virginia to New York State.

The three subsidiaries and the principal amount of notes each would issue are: Manufacturers Light & Heat Co., $536,663; Manufacturers Gas Co., $1,100,000; Pennsylvania Fuel Supply Co., $150,592. The notes will carry 4½ per cent interest and will mature 11 months after their issuance.

Columbia pointed out it has pending before the S.E.C. an application to consolidate these three subsidiaries and certain other properties into a new company to be known as the Manufacturers' Light & Heat Co.

Construction of the new pipe lines is declared necessary because three Columbia subsidiaries, Home Gas Co., Binghamton Gas Works and Keystone Gas Co., Inc., in New York, are no longer able to secure from independent New York gas-producing companies, whose gas supplies "are becoming exhausted," sufficient gas to meet their needs.

The new pipe lines will enable the companies to obtain additional gas from United Fuel Gas Co., another Columbia subsidiary with producing properties in West Virginia.

Contract Let for System For Palestine Recycling

ARP, Tex.—Wood Engineering & Construction Co., of Arp, has been awarded a contract for 10 miles of gathering and return system for the Hunt Oil Co. recycling plant, at Palestine, Tex. Work is to begin as soon as pipe arrives.

Refinery News

Refinery to Be Constructed At Vicksburg, Mississippi

JACKSON, Miss.—Construction of Mississippi's first oil refinery at Vicksburg is seen in the report that E. C. Johnston, of Longview, Tex., had purchased the site of the old Acme Veneer Co. plant and adjacent acreage. Details of the capacity of the refinery and the expenditure have not been announced. The plant will process crude from the Tinsley field, 35 miles to the northeast in Yazoo County.

Pure Planning to Build Polymerization Unit

CHICAGO, May 21.—Engineering plans are nearing completion for a new polymerization plant for Pure Oil Co. refinery at Smith Bluff, Tex. The designing of the plant is being done by engineers of three organizations, Stone & Webster Engineering Corp., Pure Oil Co., and Lummus Co. Construction of the new plant is forecast to begin soon after approval of plans. Estimates of costs have not been fully determined.

To Erect 10 Stone Stations On Pennsylvania Pike

Standard Oil Co. of Pennsylvania has awarded contracts for the construction of 10 impressive stone Esso service stations on the new Pennsylvania turnpike. They are to be completed by July 1 and will be located between Harrisburg and Pittsburgh.

Eight of the buildings, located at 15-mile intervals on either side of the large "midway" station at Bedford, Pa., will have complete automotive-service facilities and modern restaurants. These buildings will be of stone construction with slate roofs in the traditional Pennsylvania colonial style.

Sinclair Refining New Tankers For Foreign Shipments Also

NEW YORK.—Referring to Sinclair Refining Co.'s contracts for the construction of 10 high-speed tankers, H. F. Sinclair, chairman of Consolidated Oil Corp., said the company had in mind not only its coastwise requirements, but also provision for transporting Venezuelan, Mexican and other foreign oil. Bulk deliveries of the Sinclair fleet are about 42,000,000 bbl. a year.

The new vessels will aggregate more than 130,000 dead-weight tons. The expenditure involved is about $25,000,000. Bethlehem Steel Co., Inc., shipping division will build four 10,000-ton and two 15,000-ton tankers. Federal Shipbuilding & Dry Dock Co. was awarded a contract for four 15,000-ton boats. Early deliveries are required. Approximate bulk cargo capacity of the 15,000-ton boats is 120,000 bbl. and of the 10,000-ton boats, 90,000 bbl.

Arrow Petroleum Co. Begins Building Marine Terminal

CHICAGO.—The Arrow Petroleum Co. has begun erecting buildings and storage tanks for a marine terminal on the Sanitary Canal. The storage in course of erection will be 15,000,000 gal., with additions later totalling 30,000,000 gal. The company proposes bringing oil in by barge for redistribution to bulk plants, tank car and other users.

The company has an expansion program under way which includes erection in the near future of a refinery and cracking plant, and the building of general terminal facilities including a coal dock and warehouse for other materials, and the possible absorption of several other fuel-oil companies. Triangle Oil Co. of Chicago, is one of Arrow's subsidiaries.

Officers of Arrow Petroleum Co. are: P. J. Healy, president; Harry Morrall, vice president; R. G. Satterley, vice president; and James D. Maloney, treasurer.

Talco Asphalt & Refining Company Incorporated

MOUNT PLEASANT, Tex.—Talco Asphalt & Refining Co., a copartnership heretofore composed of D. H. Byrd, Jack Frost, J. F. Lucey and Ralph E. Fair, has been dissolved, and the business heretofore conducted by the copartnership has been acquired by Talco Asphalt & Refining Co., a corporation incorporated under the laws of the State of Texas, which will henceforth conduct the business under the same name

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W.P.A. Petroleum Purchases Estimated $27,000,000

WASHINGTON, D. C.—Gasoline, lubricating oil, and other petroleum products purchased by governmental agencies for use on projects sponsored by and carried out through the Work Projects Administration from July 1935, through September 1939, amounted to more than $27,000,000, it was disclosed before a congressional committee.

Estimates indicated that purchases by the Government amounted to $13,000,000, while local sponsors for such projects spent $14,500,000 for petroleum products.

Natural Gasoline

Proposes Specifications On Liquefied Gases

Those attending the 3-day convention this week in Tulsa of the Natural Gasoline Association of America heard J. W. Vaiden, of Skelly Oil Co., propose the following tentative specifications for commercial butane, propane and mixtures of the two.

Definition.—Commercial propane shall be a hydrocarbon product composed predominantly of propane and/or propylene and shall be free from harmful quantities of deleterious substances.

Composition.—The composition of commercial propane shall be at least 95 per cent propane and/or propylene by liquid volume as determined by the combined results of the vapor-pressure and mercury freezing tests.

Mercury freezing test.—The residue as determined by means of mercury freezing test shall not be more than 2 per cent by volume.

Vapor pressure.—The vapor pressure at 105° F. as determined by the liquefied petroleum gas vapor-pressure method shall not be in excess of 225 lb. per sq. in. gage pressure.

Sulfur content.—The product shall be free of hydrogen sulfide and shall not contain mercaptans, or other sulfur compounds, of a corrosive nature. The unstenched product shall not contain total sulfur in excess of 15 grains per 100 cu. ft. of vapor as determined by the test for total sulfur in liquefied petroleum gases.

Water content.—The product shall satisfactorily pass the standard cobalt bromide test.

Odorization.—A sufficient quantity of an odorizing agent of such character as to positively indicate the presence of gas down to concentrations in air of not over one-fifth the lower limit of flammability by a distinctive odor shall be added by the manufacturer.

Definition.—Commercial butane shall be a hydrocarbon product composed predominantly of butanes and/or butylenes and shall be free from harmful quantities of deleterious substances.

Vapor pressure.—The vapor pressure at 105° F. as determined by the liquefied petroleum gas vapor-pressure method shall not be in excess of 75 lb. per sq. in. gage pressure.

Final boiling point.—The quantity evaporated at a temperature of 34° F. shall be 95 per cent or more by volume, as determined by the open-cylinder weathering test.

Sulfur content.—The product shall be free of hydrogen sulfide and shall not contain mercaptans, or other sulfur compounds, of a corrosive nature. The unstenched product shall not contain total sulfur in excess of 15 grains per 100 cu. ft. of vapor as determined by the test for total sulfur in liquefied petroleum gases.

Water content.—The product shall be free of mechanically entrained water.

Odorization.—A sufficient quantity of an odorizing agent of such character as to positively indicate the presence of gas down to concentrations in air of not over one-fifth the lower limit of flammability as a distinctive odor shall be added by the manufacturer.

Definition.—Butane-propane mixtures shall be hydrocarbon products composed predominantly of mixtures of butanes and/or butylenes with propane and/or propylene and shall be free from harmful quantities of deleterious substances.

Vapor pressure.—The vapor pressure at 105° F. as determined by the liquefied petroleum gas vapor-pressure method shall not be in excess of 225 lb. per sq. in. gage pressure.

Product designation.—Butane-propane mixtures shall be designated by the vapor pressure at 100° F. in pounds per square inch gage. To comply with the designation the vapor pressure of mixtures shall be within +0 lb., —5 lb. of vapor pressure specified. For example, a product specified as 95 lb. L.P.G. shall have a vapor pressure of at least 90 lb. but not exceeding 95 lb.

Ninety-five per cent boiling point.—The quantity evaporated at a temperature of 34° F. shall be 95 per cent or more by volume as determined by the open-cylinder weathering test.

Sulfur content.—The product shall be free of hydrogen sulfide and shall not contain mercaptans, or other sulfur compounds, of a corrosive nature. The unstenched product shall not contain total sulfur in excess of 15 grains per 100 cu. ft. of vapor as determined by the test for total sulfur in liquefied petroleum gases.

Water content.—The product shall be free of mechanically entrained water.

Odorization.—A sufficient quantity of an odorizing agent, of such character as to positively indicate the presence of gas down to concentrations in air of not over one-fifth the lower limit of flammability by a distinctive odor, shall be added by the manufacturer.

Natural-Gas and Gasoline Production in Texas

AUSTIN, Tex.—Production of natural gas in Texas during March gained only slightly over the preceding month, with the daily average withdrawals amounting to 4,398,289,000 cu. ft., an increase of 98 per cent over February.

The pipe-line deliveries revealed quite a decrease, the month of February recording 1,560,068,000 cu. ft. daily, while March showed only 1,478,090,000 cu. ft., a decrease of 81,978,000 cu. ft. daily.

Recycling plants continued to show some increase in volume being slightly over 600,000,000 cu. ft. daily.

Carbon black and gasoline plant operations continued to show slight gains, amount of carbon black produced being 1,353,600 lb., and 2,216,872 gal. gasoline daily.

New officers and some of the directors of the Natural Gasoline Supply Men's Association: R. T. Roberts, Goulds Pumps, Inc.; W. F. Lowe, N.G.S.A., secretary; D. A. Leach, Chicago Bridge & Iron Co., treasurer; William Gebo, Ingersoll-Rand, Inc.; A. J. Kerr, Pittsburgh Equitable Meter Co., retiring president; L. S. Allen, National Tank Co., first vice president; W. W. Woobank, Woobank Pump & Machinery Co., president; George W. Probst, Clark Brothers Co., second vice president. Not included in the picture are the following directors; C. D. Peterson, Fisher Governor Co.; Egon Koehler, Moorlane Co., and V. C. Canter, Frick-Reid Supply Corp.

Natural Gas

Preliminary Work Begun on Saskatoon Gas Project

SASKATOON, Sask.—Preliminary work is now under way for the laying of a 169-mile natural-gas transmission line from the Lloydminster field in western Saskatchewan to Saskatoon. This, probably the longest natural-gas line ever undertaken in Canada, was authorized by the Saskatchewan Local Government Board some weeks ago, and later approved by the Saskatoon burgesses by a vote of 4.334 to 914.

Construction and operation of the line, and the distribution system in Saskatoon, will be carried on by the Northern Natural Gas Co., a wholly-owned subsidiary of Franco Oils, Ltd. The terms of the franchise stipulate that gas to be marketed in Saskatoon and communities along the route must be produced entirely from Saskatchewan fields, no lines to be laid to or gas imported from the Alberta portion of the Lloydminster field without a specific order of the Saskatchewan Local Government Board.

Frank Fisher, of Detroit, and H. R. Davis, of Buffalo, N. Y., chiefs of the engineering firm retained to plan the transmission line and distributing system, have been at work for some weeks on the preliminary surveys. As Saskatoon has never been supplied with gas, a complete new distributing system will be required. The estimated cost of the entire undertaking is between $4,000,000 and $5,000,000. Construction work will be commenced as soon as tenders are accepted, and the franchise calls for at least partial delivery of natural gas to Saskatoon by November 1, 1940. Headquarters of the Northern Natural Gas Co., and of the construction operations will be located at Saskatoon.

Since 1934, Franco Oils, headed by Walter F. Thorn, of Moose Jaw, Sask., has spent over $300.000 in oil and gas development, latterly concentrating on the Lloydminster field. Development has now reached a point where minimum reserves of this area are estimated at 39,000,000,000 cu. ft. with a practical certainty of expansion in three directions. Production comes from sands in the Lower Cretaceous, at approximately 1,425 ft., 1,710 ft., and 1,925 ft.

John K. Swanson, formerly of Minneapolis, will be general manager of the Northern Natural Gas Co., which holds the Saskatoon franchise. It is expected that ultimately the natural-gas service will be extended to North Battleford and other communities convenient to the transmission line.

Natural-Gasoline Men Are Told Industry Must Meet Challenge

(Continued from Page 27)

The practical application of high-pressure gas for the recovery of distillate and the return of the residue to the producing horizons was most completely discussed by E. E. DeBack, of the Corpus Christi Corp., who used the experiences gained at his company's large plant at Agua Dulce, Tex. (paper to be published next week). A prepared discussion of Dr. Brown's paper and application of his findings was presented by C. E. Webber, of the Humble Oil & Refining Co.

Of equal interest and importance was the discussion of the "Economics of Liquefied Petroleum Gases" by James W. Vaiden of Skelly Oil Co.

W. W. Robinson, Texas Co. of California, chairman of the technical committee of the C.N.G.A., and H. H. Anderson, Shell Oil Co., Inc., who addressed the convention and showed a sound film on "Illinois Oil Fields"

whose paper appears in condensed form starting on Page 74. In brief, Mr. Vaiden warned against too many getting into the field of manufacture despite a substantial growth in liquefied-gas sales annually.

California Research

Many of the problems discussed at the meeting had their setting or background in the Mid-Continent but the industry's general interests extend considerably beyond this area and the presence at the convention of seven technologists from California tends to confirm this. A review of the technical work now in progress in the California Natural Gasoline Association was presented by W. W. Robinson, of the Texas Co., chairman of the association's technical committee. As an abstract of his paper he said:

"Illustrating the value of cooperation on problems of mutual interest to the Pacific Coast natural-gasoline industry, the results of the 15-year standardization program of the California Natural Gasoline Association are reviewed.

"The factors are examined which led to the publication of technical bulletins covering the charcoal test, low-temperature fractional analysis, gas measurement, superexpansibility factors, the Reid vapor-pressure test, sampling and gaging, the testing of lean oil, the proving of positive-displacement meters, the determination of the specific gravity of gases and specifications and test methods for liquefied petroleum gases." He concluded: "It is presented with the idea of advancing the thought that if standardization has sectional value, then, through intersectional or regional cooperation it should have even greater value. The California Natural Gasoline Association has enjoyed the benefits of work sponsored by the Natural Gasoline Association of America and it is therefore timely to express the hope that some of C.N.G.A.'s activities may have been of interest and possible benefit to N.G.A.A.

Fuels of Tomorrow

Natural-gasoline manufacturers who foresee the general utilization of light liquid products of their operations as charging stock for dehydrogenation and polymerization units were brought one step nearer to realizing this as they listened to R. C. Alden, of the Phillips Petroleum Co., present data covering the manufacture of neohexane at the company's Borger, Tex., refinery. Here the process utilizes the cracked gases from the refinery and liquefied gases from natural-gasoline plant operations to produce neohexane, a 92-octane motor-fuel fraction which requires no blending with other fractions to gain volatility and has an unusually high lead susceptibility.

Conservation

Appearing on the program was a paper to be presented by H. B. Bernard on the subject of "The Position of Natural Gasoline in Conservation," but Mr. Bernard was unable to be there and it was read by J. A. LaFortune of the Warren Petroleum Corp.

Other Speakers

Discussion of the various papers was offered from the floor from time to time to add interest and value to the meeting. Encouragement for this open discussion came from the chairmen of the sessions including T. R. Goebel, of the Shell Oil Co., Inc.; H. E. Felf, of Warren Petroleum Corp.; Ray E. Miller, of Hanlon-Buchanan, Inc.; E. O. Bennett of the Continental Oil Co.; Gene Middlebrook, of Shell Oil Co., Inc., and H. H. Beeson, of the Sabine Valley Gasoline Co.

Kinks Session

A full day (Friday) has been turned over to operating men for their presentation of "Operating Kinks" with exception of the reading of one paper on the subject of "Eliminating Hydrate Troubles," by E. G. Hammerschmidt, of Texhoma Natural Gas Co.

The top-prize-winning kink is included here and others will be presented in the next two issues of The Oil and Gas Journal. Judges in the contest included H. H. Beeson, Sabine Valley Gasoline Co.; W. F. Fulton, United Gas Pipe Line Co.; S. F. Mauney, Carter Oil Co.; H. D. McLean, Hercules Gasoline Co., Inc.; Harry Wheeldon, Lone Star Gasoline Co. Cash awards were made in each of four classes of kinks and three prizes were given in each class.

Entertainment and Lunches

As has been the custom, the Natural Gasoline Supply Men's Association provided noon lunches for those attending the convention on Thursday and Friday and the association also provided a dance on Thursday night.

●

Registration List of International Visitors to Exposition

(Continued from Page 25)

Francis G. West, N.V. de Bataafsche Petroleum Mij., London.

H. E. W. Johnston, Central Mining & Investment Corp., London.

H. Cartwright Reid, Anglo-Iranian Oil Co., Sussex.

ESTONIA

Paul Kents, Government of Estonia, Jallinn.

G. I. Schwallbach, Clark Brothers, Inc., Tallinn.

HUNGARY

G. P. Morvay, Budapest I, Lovas Uig.

INDIA

D. L. Girsham, D. O. C., Ltd., Digboi, Assam.

JAPAN

Komao Tachikawa, Nippon Oil Co., Tokyo.

Sigeru Yamanouchi, Nippon Oil Co., Tokyo.

Ryzo Niizima, Nippon Oil Co., Tokyo.

MEXICO

Jose M. Estrop, Petroleos Mexicanos, Mexico City.

J. M. de la Garza Cardenas. Mexico City.

Dan E. K. Breen, Mexico City.

Carrillo M. Leonides, Mexico City.

Vidal Rangel, Mexico City.

Carlos Romanillo, Mexico City.

Jose Luis Rodriguez, Mexico City.

Saloman Fernandez Sosa, Mexico City.

Theo. Krafft, Mexico City.

Miss Olympia Blea, Mexico City.

Vincente Cortes Herrera, Petroleos Mexicanos, Mexico City.

Rodolfo M. Fernandez, Petroleos Mexicanos, Mexico City.

Rafael Michel, Petroleos Mexicanos. Mexico City.

I. B. Sutton, General Machinery & Supply Co., Tampico.

NETHERLANDS

Dr. Folkert Brons, Bataafsche Petroleum Mij., Netherlands.

J. C. B. van den Berg, B.P.M., The Hague.

Dr. Rudolf Martin, Shell Oil Co., The Hague.

C. P. Schaafsna, Bataafsche Petroleum Mij., Holland.

J. A. Bolle, Nederlandsche Koloniale Petroleum Mij., The Hague, Holland.

B. N. van Diemen de Jel, Nederlandsche Koloniale Petroleum Mij., The Hague, Holland.

NETHERLAND EAST INDIES

A. H. J. van Goch, Royal Dutch-Shell, Tjepoe, Java, Dutch East Indies.

J. J. Cardynaals, Shell Oil Co., Dutch East Indies.

PERU

A. Norcott, International Petroleum Co., Talara.

C. M. Baldwin, International Petroleum Co., Negritos.

R. A. Ratliff, International Petroleum Co., Negritos.

S. L. Slaughter, International Petroleum Co., Negritos.

RUSSIA

B. Shubin, Amtorg Trading Corp., Moscow.

A. N. Petrov, Amtorg Trading Corp., Moscow.

TRINIDAD, B.W.I.

S. B. Schnitter, Baker Oil Tools, Inc., Port-of-Spain.

VENEZUELA

Mrs. Louie de Dacovich, Lago Petroleum Co., Caracas.

James R. Cree, Lago Petroleum Co., Maracaibo.

James A. Clark, Lago Petroleum Co., Maracaibo.

H. M. A. Meyer, Shell Oil Co., Inc., Maracaibo.

L. J. Alleman, National Supply Co., Maracaibo.

W. M. Schaill, Mene Grande Oil Co., Maracaibo.

Dr. P. D. Timmermans, Shell Oil Co., Inc., San Christobal.

L. J. van Dijk, Caribbean Petroleum Co., Marcaibo.

H. J. Wharton, Mene Grande Oil Co., Maracaibo.

George Holmes, Caribbean Petroleum Co., Maracaibo.

J. M. Black, Mene Grande Oil Co., Barcelona.

F. T. Barfield, Mene Grande Oil Co., Barcelona.

R. D. Murphey, Standard Oil Co. of Venezuela, Caripito.

Carlos Perez de la Cava, Ministerio de Fomento, Caracas.

R. A. Henkes, Caribbean Petroleum Co., Maracaibo.

M. A. Huffman, Socony-Vacuum Oil Co., Maracaibo.

R. B. Hester, Standard Oil of Venezuela, Caripitio.

Harry M. Hoberg, Caracas.

Jose Martorano, Ministerio de Fomento, Caracas.

L. C. Stevens, Caribbean Petroleum Co., Maracaibo.

M. O. Smith, B. C. O., Ltd., Maracaibo.

R. N. Wright, Guarico Oilfields, Ltd., Caracas.

Bert H. Muell, Caribbean Petroleum Co., Lagunillas.

W. T. Mendall, Caribbean Petroleum Co., Lagunillas.

V. W. Fletcher, Caribbean Petroleum Co., Maracaibo.

J. A. Holmes, Standard Oil Co. of Venezuela, Caracas.

T. L. Tweedle, Mene Grande Oil Co., Maracaibo.

Siro Vazquez, Standard Oil Co. of Venezuela, Caripito.

Rex Watson, Lago Petroleum Co., Maracaibo.

J. P. Williams, Mene Grande Oil Co., Maracaibo.

R. S. Cannon, Standard Oil Co. of Venezuela, Caripito.

YUGOSLAVIA

Srecko Kajfez, Cardwell Manufacturing Co., Karlovac.

Grady T. Chupp, drilling superintendent.

For all seasons

Motorists will burn 106 barrels of gasoline this season where they burned 100 in 1939—that's the prediction

Dubbscracking is the way to make gasoline—and U. O. P. catalytic polymerization is a great help too, in yield and octane rating

"But refiners forget there will be another winter," says Keith Fanshier in the Chicago Journal of Commerce "The largest consumption gains nowadays are being turned in by domestic fuel oils"

Dubbs refiners *can* forget winter They can run their units to make the most gasoline in summer when they need it—and the least fuel oil

And they can turn their operating schedule right around when winter comes and fuel oil gets the play

Dubbs refiners win both ways

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

PROGRAMS AND MEETINGS

Illinois-Indiana Petroleum Association Conference

The eighth annual petroleum conference of the Illinois-Indiana Petroleum Association is to be held at Robinson, Ill., June 1. This conference has resolved itself into a forum wherein the technical and practical problems of the producers in the Illinois-Indiana area can be freely discussed. The program committee has prepared a diversified program to include subjects of current interest to everyone.

The annual oil men's golf tournament and the annual stag dinner are two features, the golf tournament this year being sponsored by Ohio Oil Co. with A. T. McKinney, Millard Flood and Walter Kirkbride in charge.

The guest speaker at the stag dinner will be Neal Nyland, director of advertising for Plymouth Motor Corp., Detroit, Mich. Halliburton Oil Well Cementing Co. is in charge of the entertainment.

The annual conference committee is composed of R. B. Kelly, Pure Oil Co., Olney, Ill.; Dr. A. H. Bell, state Geological Survey, Urbana, Ill.; Prof. Ralph Esarey, state geologist, Bloomington, Ind.; T. B. Steele, Kewanee Oil Co., Robinson, Ill.; George Hays, American Oil Development Co., Robinson; L. W. Singleton, Bradford Oil Corp., Robinson; R. J. Sullivan, Carter Oil Co., Mattoon, Ill.; John T. Cumbie, Magnolia Petroleum Co., Mattoon, and Chairman Lee Mulvihill.

The program follows.

Morning session. Chairman, William A. Watkins, division superintendent, Carter Oil Co., Mattoon, Ill.

Address of welcome, John Cumbie, land department, Magnolia Petroleum Co., Mattoon.

Introduction, Dr. M. M. Leighton, chief Illinois State Geological Survey, Urbana.

"Review of Structural Discoveries in the Illinois Basin," C. J. Hares, division geologist, Ohio Oil Co., Marshall, Ill.

"Electrical Logging While Drilling," David G. Hawthorn, Amerada Petroleum Corp., Tulsa.

"New Discoveries in the Old Northeastern Trenton Fields of Indiana," Prof. Ralph Esarey, state geologist, Conservation Department, State of Indiana.

"Markets for Illinois Oil in 1940," Walter H. Voskuil, mineral economist, Illinois State Geological Survey, Urbana.

Afternoon session. Chairman, E. J. Reading, land manager, Sun Oil Co., Evansville, Ind.

"Oil in Illinois," accompanied by sound motion picture "Oil From the Earth," H. H. Anderson, vice president, Shell Oil Co., Inc., St. Louis, Mo.

"Stabilization Through Proper Well Spacing," D. R. Knowlton, production manager, Phillips Petroleum Co., Bartlesville, Okla.

"Electrification of Oil Field Properties," Orville Dowzer, Dowzer Construction Co., Salem, Ill.; R. E. Hammond, petroleum engineer, Carter Oil Co., St. Elmo, Ill.

"Taxation of Oil Properties in Illinois and Indiana," H. G. Chase, tax agent, Pure Oil Co., Chicago. Discussion, Merle Becker, auditor, W. C. McBride, Inc., St. Louis.

Evening session. Toastmaster, Roscoe Adams, vice president, First National Bank & Trust Co., Tulsa.

Guest speaker, Neal Nyland, director of advertising, Plymouth Motor Corp., Detroit.

A.S.M.E. Three-City Summer Meeting Programs

For the first time in the history of the American Society of Mechanical Engineers, the 1940 semiannual meeting will be held in three cities at the same time. With simultaneous meetings taking place in Milwaukee, Wis., at the Hotel Pfister, June 17-20; in Ann Arbor, Mich., at the University of Michigan, June 20-21; and in Asbury Park, N. J., at the Berkeley-Carteret Hotel, June 19-22, more members will be afforded an opportunity to attend one group of technical sessions and to take part in the attendant social functions, according to Erik Oberg, chairman of the A.S.M.E. meetings and program committee.

Featured at the main meeting in Milwaukee will be 13 technical sessions with 30 papers covering hydraulics, steam power, education and training, management, fuels, machine-shop practice, process industries, and railroads, several plant trips, luncheons, business meeting, and a banquet. The meeting at Ann Arbor, under the sponsorship of the society's applied mechanics division, will present four technical sessions, devoted to elasticity, dynamics, fluid mechanics, and thermodynamics, with 13 papers by some of the outstanding engineering theorists of the country. Besides an exhibit of diesel engines and accessories, the A.S.M.E. oil and gas power division's meeting in Asbury Park will include six sessions with 12 technical papers.

Petroleum Safety Program At Michigan Conference

At the petroleum-industries sessions of the Michigan statewide safety conference at the Olds Hotel, Lansing, May 23-24, the following papers will be delivered:

Thursday, May 23

Presiding, W. L. Davis, vice president, Roosevelt Oil Co., Mount Pleasant.

10:30 a.m.—"Safety in the Storage and Handling of Flammable Liquids," R. S. Russell, Pure Oil Co.

11:30 a.m.—"A Safety Organization and Program for a Small Group," M. T. Ford, Socony-Vacuum Oil Co., Inc., Flint.

2 p.m.—"Safe Tank-Truck Design and Equipment," W. E. Fletcher, Gar Wood Industries, Inc.

3 p.m.—"Safe Driving of Tank Trucks," J. Willard Lord, safety engineer, Atlantic Refining Co.

Friday, May 24

Conference luncheon.

12:15 p.m.—"Management—Let's Explore It," Capt. A. A. Nicholson, personnel manager, Texas Co.

2 p.m.—"First Aid Training in the Petroleum Industry," W. O. West, senior safety instructor, U. S. Bureau of Mines, Vincennes, Ind.

3 p.m.—"Gas Hazards as They Relate to Health and Safety in the Petroleum Industry," R. D. Leitch, chemical engineer, U. S. Bureau of Mines, Pittsburgh, Pa.

4:15 p.m.—Open-forum discussion on production accident hazards.

Public Relations Meeting With A.P.I. at Fort Worth

The American Petroleum Institute regional public-relations committee for Texas and Louisiana will hold its next regular meeting in the Texas Hotel, Fort Worth, Tex., at 10 a.m., Tuesday, May 28, in connection with the institute's tenth midyear meeting.

Leading oil men from Texas and Louisiana will attend and reports will be made by the following subcommittee chairmen: J. Sayles Leach, Arthur Levy, and Charles A. Warner, of Houston; Frederick F. Murray and John P. Morgan, of Dallas; Harold G. Neely, of Fort Worth, and D. W. Spurlock, of Shreveport, La.

Edwin B. Cox, of Dallas, is chairman of the regional committee, J. Sayles Leach, of Houston, vice chairman, and Chase E. Sutton, of Houston, secretary.

Raymond J. Walter, formerly of New York, has been appointed executive secretary with offices in the Gulf States Building, Dallas, Tex.

CALENDAR OF EVENTS

May

AMERICAN PETROLEUM INSTITUTE, midyear meeting, Fort Worth, Tex., May 27-31.

NATIONAL OIL SCOUTS AND LAND MEN'S ASSOCIATION, annual convention, Hot Springs, Ark., May 30-June 1.

June

ILLINOIS-INDIANA PETROLEUM CONFERENCE, eighth annual meeting, Robinson, Ill., June 1.

NATIONAL ASSOCIATION OF PURCHASING AGENTS (Oil Company Buyers' Group) annual convention, Netherland-Plaza Hotel, Cincinnati Ohio, June 3-6.

SOCIETY OF AUTOMOTIVE ENGINEERS, summer meeting, The Greenbrier, White Sulphur Springs, W. Va., June 9-14.

SOUTHWEST PETROLEUM CREDIT GROUP, San Antonio, Tex., June 17-20.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Milwaukee, Wis., June 17-20.

PERMIAN BASIN ASSOCIATION, semiannual meeting, Odessa, Tex., June 21-22.

AMERICAN SOCIETY FOR TESTING MATERIALS, Chalfonte-Haddon Hall, Atlantic City, N. J., June 24-28.

ILLINOIS BASIN CHAPTER OF AMERICAN PETROLEUM INSTITUTE, McCurdy Hotel, Evansville, Ind., June 29.

September

AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Spokane, Wash., September 3-5.

AMERICAN CHEMICAL SOCIETY, Detroit, Mich., September 9-13.

NATIONAL PETROLEUM ASSOCIATION, thirty-eighth annual meeting, Hotel Traymore, Atlantic City, N. J., September 18-20.

NATIONAL LUBRICATING GREASE INSTITUTE, annual convention, Stevens Hotel, Chicago, September 30-October 1.

October

AMERICAN GAS ASSOCIATION, Atlantic City, N. J., October 7-10.

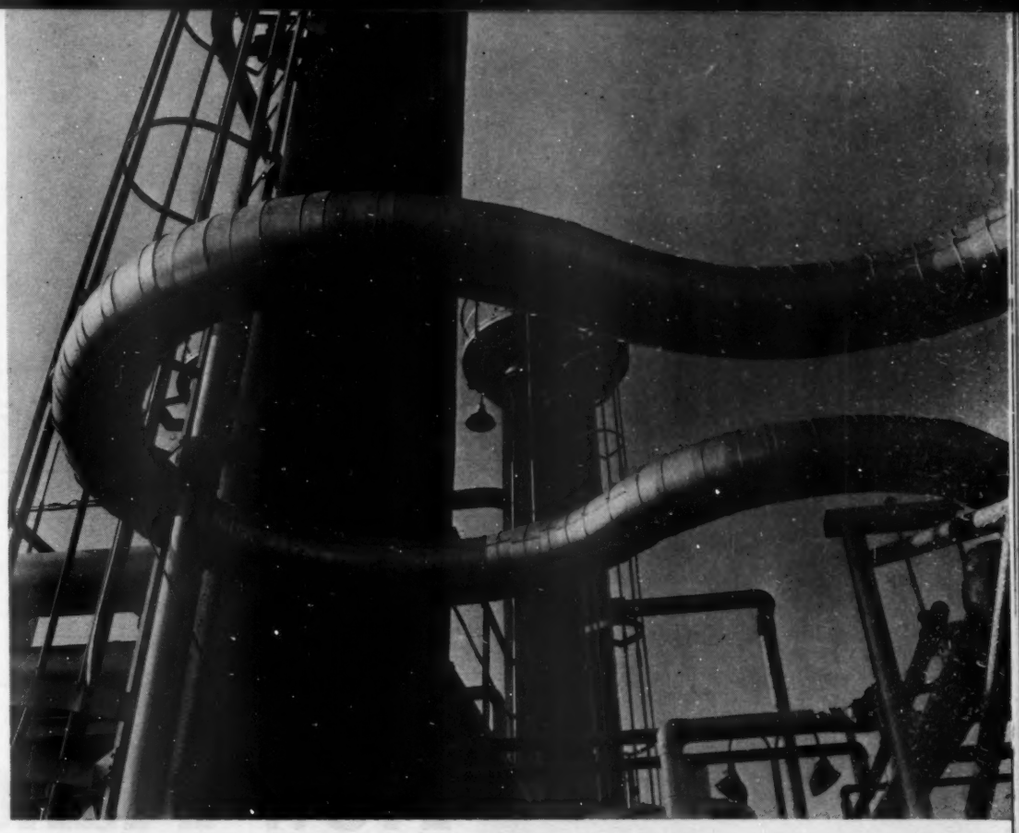
NATIONAL SAFETY CONGRESS, Stevens Hotel, Chicago, October 7-11.

INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA, eleventh annual meeting, Dallas, Tex., October 16-18.

TEXAS MID-CONTINENT OIL AND GAS ASSOCIATION, annual convention, celebrating Texas oil's forty-fifth birthday, Fort Worth, Tex., October 31-November 2.

November

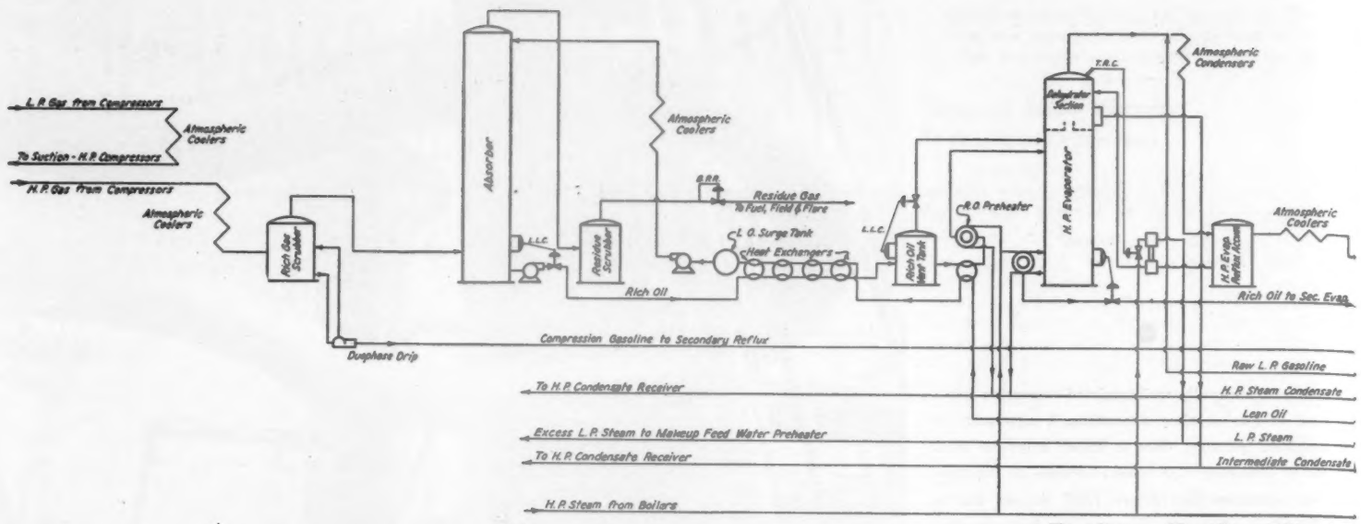
AMERICAN PETROLEUM INSTITUTE, twenty-first annual meeting, Stevens Hotel, Chicago, November 11-15.



Frequent and unusually well-insulated expansion joints are used in gas-recycling operations, a newcomer to the petroleum industry. Here is shown a typical joint, capable of absorbing high rates of change in line temperature, pressures well above 1,000 lb. per sq. in. and pulsating vibrations, common to high-pressure, reciprocating pumping or plant operation

ENGINEERING & OPERATION

MAY 23, 1940



Flow diagram, Magnolia gasoline plant,

Boiler plant and generator with water-feed pumps in foreground

New Plant Recovers Gasoline From

By GEORGE WEBER

RECOVERY of a large natural-gasoline and butane reserve is being effected in Shell Oil Co., Inc.'s new natural-gasoline plant in the Magnolia field of South Arkansas. (Associated with Shell in this venture are Atlantic Refining Co., Leon F. Russ and others, and Grady Vaughn.) Performance tests were recently completed on the plant, which processes casinghead gas from oil wells in the field.

The plant was constructed by the Gasoline Plant Construction Corp., of Houston, Tex. Its designed capacity is 15,000,000 cu. ft. of gas daily and regular operation has settled at 13,000,000 to 14,000,000 cu. ft. at the present time. At current throughput rates, daily totals of 25,000 to 26,000 gal. of 26-70 natural gasoline and about 13,000 gal. of butanes are being produced.

Operation of the new plant is an important factor in conservation of Arkansas' petroleum reserves. Estimates made by engineers of the state Oil and Gas Commission show total recoverable reserves of crude from the area served at 180,000,000 bbl. On this basis, and the conservative estimate of 700 cu. ft. of gas in solution per barrel of oil, solution-gas estimates total 126,000,000,000 cu. ft. at the surface. Gas-oil ratios at the present time approximate 890 cu. ft. per bbl. in the field. Characteristic of Smackover lime production, Magnolia gas is sour, averaging 1,400 grains of hydrogen sulfide per 100 cu. ft. of gas.

Casinghead-gas production may be expected to continue at essentially the same rate in the field. Magnolia is approaching the end of its drilling development and production is being restricted to correspond to the critical rate of water encroachment in the porous lime. This unusually active water drive will maintain reservoir pressures substantially constant under current withdrawal rates, and gas-oil ratios and gas richness may be expected to remain relatively constant also.

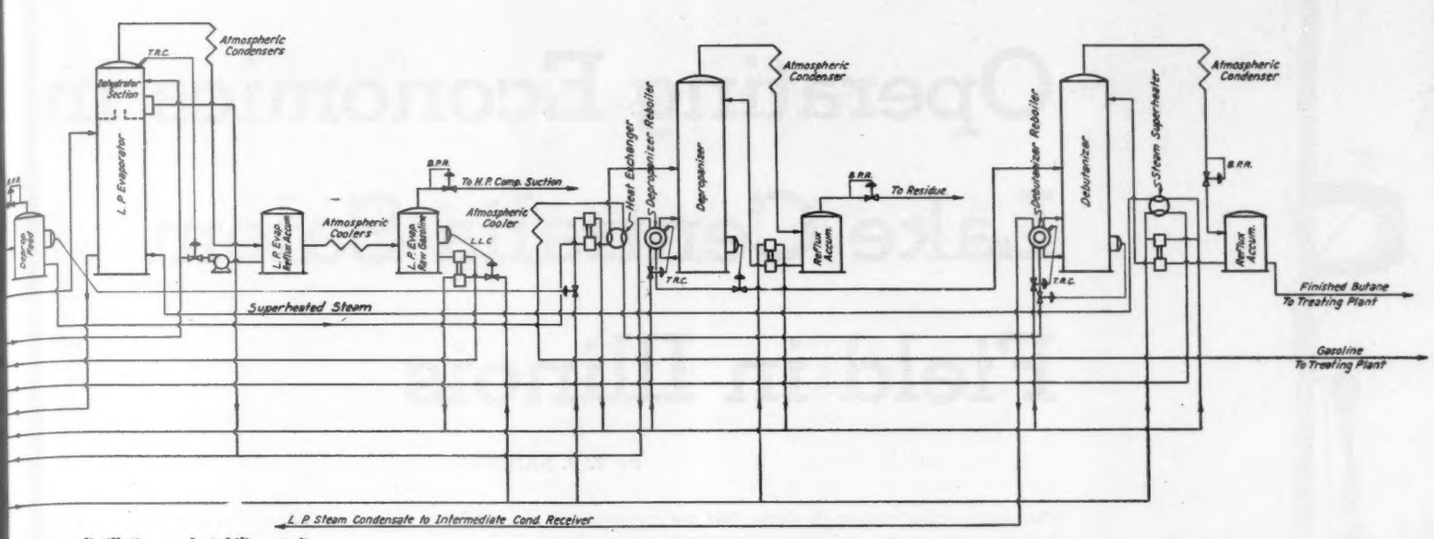
In addition to the gas in solution in the oil at Magnolia, a gas cap averaging 65 ft. in thickness and 1,400 acres in areal extent is estimated to hold 166,000,000,000 cu. ft. of gas at atmospheric pressure. This gas, in addition to the casinghead now being processed, provides a sizeable reserve which will assure long-term operation of Shell Oil Co., Inc.'s plant. Of the total estimated 126,000,000,000 cu. ft. of ultimate recoverable gas in solution, approximately 6,000,000,000 have already been produced. No gas from the gas cap has been produced since all wells are required to case off the upper section and an appreciable section of the oil saturation below the gas-oil contact.

Gathering and residue lines in the plant system serve the entire Magnolia field. Separator pressures at Magnolia are not at present consistent throughout the field, ranging from 1 to as high as 15 lb. per sq. in. on some leases.

Plant Operation

The high-pressure absorption-type natural-gasoline plant employs five 485-hp. compressors to boost the field gas to plant operating pressure. A total boiler capacity of 630 hp. furnishes steam at

Overall of distillation, showing absorbers, still, and stabilizer



showing distillation and stabilizer units

Butanes and Natural Magnolia Reserves

the rate of 24,000 lb. per hour. Three thousand pounds of exhaust steam is used as stripping steam.

Of the sour residue gas, approximately 800,000 cu. ft. daily are treated by the Shell tripotassium phosphate method, which comprises absorption and extraction of hydrogen sulfide at a pressure of 32 lb. per sq. in. and renders the gas suitable for engine use. A daily average of 800,000 cu. ft. of untreated gas fires the boilers; 200,000 to 1,000,000 cu. ft. are furnished to field operators for drilling and lease purposes and 2,000,000 to 3,000,000 cu. ft. are being used currently in the nearby Atlanta field for drilling.

The untreated gas is entirely unsuited for distribution to domestic consumers because of its high sulfur content.

Raw gas from the field gathering lines enters the scrubbers ahead of the compressors at about atmospheric pressure. In the two-stage compression, it is boosted to 37 lb. per sq. in. on the low side and 180 lb. per sq. in. on the discharge from the second stage.

Absorption takes place at an optimum pressure of 175 lb. per sq. in., with rich-oil temperatures varying between 100° and 110° F. Oil-circulation rates average between 220 and 230 gal. per minute. Excellent results are being obtained with a 42-gravity, very low cold test, coastal distillate as absorption oil.

Rich-oil stripping takes place in two stills. The primary, or high-pressure still, maintains a reboiler temperature of about 400° F., and the secondary still, which employs stripping steam, without use of a reboiler, has a bottom temperature of 385° F. The primary still operates within a few pounds of the optimum absorber pressure, while the charge to the secondary still is flashed to between 45 and 50 lb. per sq. in.

Engine room, showing 485-hp. engines

The overhead from both stills is condensed in the base of the atmospheric cooling tower where atmospheric cooling for the entire plant is consolidated. A water rate of 2,500 g.p.m. maintained in the cooling tower is supplied by two wells producing plant requirements. No surface water is used.

Manifold header to compressor room, with gas scrubber in background

Secondary Condensate

The secondary condensate is similar to raw gasoline from a low-pressure plant, while the primary condensate is fairly light. In order to induce condensation, all of the secondary condensate is added to the vapor stream overhead from the primary still.

Condensate from the primary still is then charged first to the depropanizer where the light fraction is removed. The stabilized product is then cut into natural-gasoline and butane fractions in the debutanizer column which follows the depropanizer in the flow stream.

The two plant products are run to plant storage, with capacity for 240,000 gal. of gasoline and 94,000 gal. of butanes. Three-inch gasoline and 2-in. butane lines connect plant storage with a 10-spot loading rack on a railroad siding 5 miles distant. Much butane is trucked out from a loading station at the plant, serving consumption points in Arkansas, Tennessee and Mississippi.

Operating Economics in Lake Centralia-Salem Field in Illinois

By T. P. SANDERS

Most well-servicing units in the Salem field are equipped with masts. Many locations have four twin wells to produce the four separate sands. If each well were equipped with a mast, the guy wires would prevent the approach of a truck. The view at the left shows a drilling rig which uses a 94-ft. mast instead of a derrick for large-hole rotary drilling

BECAUSE of highly competitive drilling and production the Salem field of Illinois will never be cited as a good example of modern operation. Technical advancements of recent years, directed toward better utilization of reservoir pressure, have necessarily been ignored in order to meet the more practical requirements of operating under boom conditions. Gas-oil ratios are not subject to control under open flow; recompression of gas for return to the reservoirs calls for a more-than-Christian attitude toward neighboring operators under such conditions, and as a result the gas returned represents an almost insignificant volume when compared with the portion that is vented and burned.

But while the industry is prevented from pointing with pride to the Salem field, many improvements have been introduced by cost-conscious managers which will take their place among approved practices of the future.

Part of the progress is a change of viewpoint toward costs. Over the United States as a whole it has been found that of the total sum expended on the average well, 75 per cent of this total is expended before any oil is produced. In other words, three times more is spent for drilling and completing than is spent in operating the well throughout its productive life. This suggests that development work represents the more inviting field in which to effect a material saving.

Carrying this line of thought another step, some Illinois operators have found it possible to reduce their development costs for shallow wells from a total of $10,000 to $8,000 per well. These wells are expected to recover an average of $18,000 worth of oil, after deducting operating costs. Thus the profit on money invested presumably would have been 80 per cent. But the reduced investment increased the expected profit to 125 per cent on the money invested. This meant that a million dollars could be spread over a larger number of wells and thereby bring in a 45 per cent greater profit. When viewed in this manner reductions in development costs assume greater importance than if it were simply stated that the investment had been reduced 20 per cent.

It was the above viewpoint that made slim-hole drilling especially attractive to those Illinois operators who were quick to endorse it. While it is admitted that some production may be lost in certain cases due to limitations placed on pumping equipment and well-conditioning procedures by the small-diameter hole, the increased investment profits are considered adequate to compensate for these possible losses.

Drilling masts.

In order to meet the demand for low-cost drilling, contractors have had to cut moving and rigging-up costs through use of unitized portable rigs, sometimes using a mast to avoid the time and expense of erecting a drilling derrick. One such mast, 94 ft. high, is used by Kiowa Drilling Co. for drilling 8⅝-in. holes in which 7-in. casing is set. A well drilled with this mast was completed in the Devonian lime at 3,400 ft.

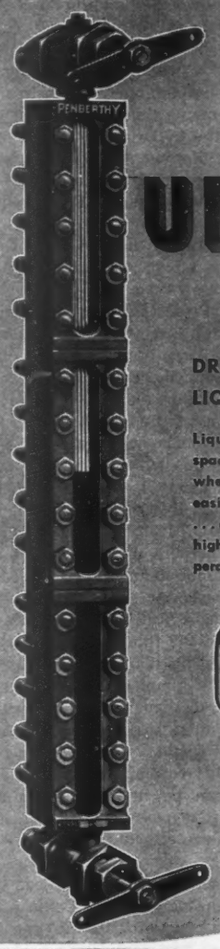
Drilling of Salem wells involves few unusual problems. Loss of returns in the neighborhood of 2,900 ft. while drilling the 3,400-ft. Devonian wells constitutes the most difficult problem. Oddly enough, the loss of circulation always appears to take place in a limy shale in which logs show no porosity. Whether or not fractures are responsible is unknown, but the "thief" formation acts as if it were occupied by fluid under some pressure. Mud circulation can usually be maintained by using a light-weight mud of high viscosity, thereby placing the minimum hydrostatic pressure against the formation. However, when the casing is cemented the additional weight results in a rapid loss of slurry.

Preventing Loss of Slurry

In completing Devonian wells it is considered very important that the casing is cemented throughout practically all of its length in order to protect the upper sands, which are produced in nearby twin wells at most locations. These upper productive horizons begin with the Benoist sand, the top of which is found at a depth of 1,750 to 1,950 ft. The Aux Vases sand is topped at 1,750 to 1,950 ft. and the McClosky lime is topped at 1,900 to 2,100 ft., leaving a thick unproductive interval between this and the top of the Devonian lime at 3,375 to 3,575 ft. After cementing, the temperature surveys are commonly made inside the casing in order to ascertain that the cement column has covered all of these productive horizons. Heat of reaction of the setting cement reveals its presence behind the casing. The well is closed in 12 hours before the temperature survey is run.

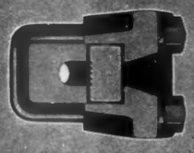
Loss of slurry to the limy shale formation at

QUALITY UNCOMPROMISED



PENBERTHY
Reflex
DROP FORGED STEEL LIQUID LEVEL GAGES

Liquid shows black—empty space shows white. Preferred wherever liquid level must be easily and positively visible . . . and when liquids are under high pressure or at high temperature.



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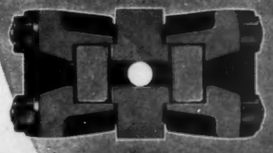

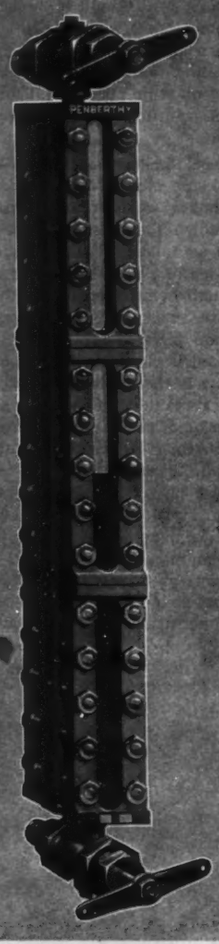

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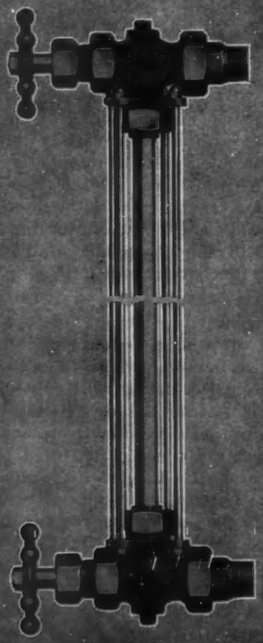
Made of Chromium-molybdenum alloy temperature-resisting steel, extra heavy throughout. Stainless steel trimmed. Tubular glass type gages also available in various other metals suitable for practically all conditions.



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PENBERTHY PRODUCTS

2,900 ft. makes it difficult to place cement opposite the upper sands. Great quantities of cottonseed hulls are commonly pumped into the hole with the drilling mud in order to condition the hole for the cementing operation. Fibrous material is often used in the cement to accomplish the same purpose.

Cementing through braden head.

One method developed for placing cement opposite the shallow sands is the practice of pumping cement down the outside of the casing. The procedure is as follows: Slurry is first pumped down the inside of the casing in the conventional manner, enough being used to fill the hole some distance above the "thief" formation. After this batch has been pumped around the casing shoe, the casing head is closed to hold it in place. The cementing line is then connected into the braden head and the remainder of the cement is pumped down the outside of the casing, forcing mud ahead of it into the "thief" formation. About 600 sacks are used in all. While this method has been successful in most cases, it is sometimes found that part of the slurry is forced into upper formations. The temperature survey then shows that some of the sands remain unprotected and it becomes necessary to perforate the casing in the uncemented portion and to perform a squeeze cementing job using a cement retainer.

Left: Pumping wells in the vicinity of the Centralia Lake reservoir in the Salem field of Illinois. Below: Typical pumping equipment for Devonian wells in the Salem field. The well site is in the Magnolia camp

There has been some speculation as to what the net result would be if the upper sands were not protected by cement. An accidental water flood could be expected which would serve to increase recovery in some cases. However, in most locations the twin wells are so close to the Devonian wells that their lives would be shortened considerably by the water encroachment.

Multistage cementing.

Two-stage cementing has proved to be a successful method of placing cement opposite the upper oil sands in Devonian wells. When the casing string is assembled, the upper-stage device is placed about 2,300 ft. from the top. The first-stage batch is pumped in, using one or two plugs that will pass through the device. This batch is followed by a measured volume of mud which in turn is followed by the upper-stage slurry. When the lower plug of the upper stage reaches the cementing device, nearly all of the lower-stage slurry has been forced around the casing shoe. This lower-stage batch will usually rise outside the casing above the upper-stage cementer, but this is not necessary because the interval is unproductive. Average lower-stage batches consist of about 300 sacks for 7-in. casing.

When the lower plug of the upper stage engages the upper-stage cementing device, pins are sheared due to pump pressure and a sleeve is forced downward to expose ports through which the slurry passes out of the casing. Upper-stage batches consisting of 300 sacks are usually used. If returns are not obtained the temperature survey reveals whether or not all productive horizons are protected. The lower pump pressure required when part of the cement is pumped through the casing at an intermediate point serves to minimize loss of slurry to "thief" formations.

Squeeze cementing of "thief" zone.

A squeeze-cementing procedure has been developed by Magnolia Oil Co. to prevent slurry loss while cementing casing. Before the casing is run a batch of 150 sacks of cement is pumped down the drill pipe. This slurry is spotted opposite the 2,900-ft. "thief" formation by displacing mud from the hole. A blowout preventer is then closed around the drill pipe and pressure is applied with mud pumps, forcing the slurry out of the drill pipe and into the formation. This usually requires 250-lb. pressure. The pipe is raised about one joint during the squeeze; then it is withdrawn and the well is closed for 8 hours while the cement sets.

In some instances slaked lime has been used instead of cement slurry with successful results, thereby minimizing mud deterioration.

A bulk cement-dispensing plant has been constructed in the Salem field by Halliburton Oil Well Cementing Co. which is expected to serve the entire surrounding area. The cement is received in railroad box cars, each car holding 300 to 350 bbl. Six carloads are usually kept on the siding in order to make available whatever kind of cement the operator desires. Steel-tank storage supplements the box cars, but to avoid extra handling the tanks are not used more than is necessary. Shipping and storage is arranged so that fresh cement is assured, and this is considered one of the outstanding advantages of the bulk system.

In operating the bulk plant the cement is picked up from box cars or from storage tanks by means of a screw-type conveyor driven by an electric motor. From this unique machine it is conducted through a large hose with the help of compressed air to a large hopper installation under which the trucks and trailers drive. Air lines and an electric vibrator are used to obtain smooth flow and easy handling of the cement in the hopper. The entire installation is watertight and incorporates an accurate scale which furnishes an automatic record of the cement loaded for each job. The weight is automatically converted to the corresponding number of 94-lb. sacks.

The trailers used to haul bulk cement to the wells hold about 300 sacks each. In the Salem area the larger cement jobs require two or three such loads. Trucks used to draw the trailers are either of the four-wheel-drive type or are smaller trucks using two sets of dual-tread wheels in the rear. All four of these dual-tread wheels are powered, and they can be interlocked so that all wheels must turn together instead of allowing one wheel to spin when the truck is stuck in mud. With this equipment it is believed that bulk cement can be delivered to almost any location where it is possible to haul sacked cement. The trailers are closed and watertight to keep the cement dry.

The cement mix is subject to greater control under the new process because the dry cement is fed at a constant rate into the mixing hopper by means of two conveyor screws in the bottom of each of the hopper-like trailers. These screw conveyors are driven by a small engine and are provided with a counter which records the number of 94-lb. sacks fed into the hopper. Unused cement is taken back to the bulk plant where it is returned to the proper storage tank and credited to the particular cementing job.

When several trailer loads of bulk cement are used on a job the trailers are placed in a semicircle. The mixing hopper is moved from one to the next as the trailers are emptied. Sightliness of the location is favored by absence of the pile of empty cement sacks.

Surface casing.

Aside from the casing string which is cemented over the pay to be produced, the only other pipe used in Salem wells is the surface string, which is usually about 70 ft. long. One company uses lease labor and equipment for cementing this short string. The slurry is mixed with hoes in a trough of the type used for livestock. The slurry is then placed around the outside of the surface string while mud is sucked from the inside of

Right: Tank battery curved to fit ridge on which it is located. A straight-line battery, as called for in most company standards, would have required considerable fill-in work

the string by means of a small pump. This procedure has proved especially handy when weather conditions have made it difficult to reach remote locations with heavier cementing equipment.

Production Economies

Since pumping conditions in Salem field are unusually favorable, selection of equipment has been directed primarily toward reduction of necessary investment. There is a notable absence of larger-than-necessary equipment.

The only pumping troubles are encountered in the Devonian wells. Upper productive zones produce so little gas that gas lock is not experienced, and no appreciable amount of sand is produced from any of the horizons. Devonian wells average about 1,000 cu. ft. of gas per barrel of oil while flowing, and the pumping wells are still producing considerable gas. Some of these wells probably fall within the "agitator" or "semiagitator" class, but they are all operated as true pumpers. That is, the gas is blown off through the casing, so far as possible, instead of through the tubing as it would be in the case of an agitator well where it would be utilized to help lift the oil in the tubing.

Gas lock reduced by "pockets."

Gas lock, which has been very troublesome in Devonian wells, has been reduced by the use of "pockets" drilled about 30 ft. into the barren formation below the Devonian pay. The pumps are set in these pockets and the equipment is regulated to operate at speeds that will maintain low fluid heads in the wells. Separation of gas from oil is favored by the fact that the fluid must flow downward to the pump intake instead of upward.

Gas lock is also minimized by selecting pumps that can be operated so that the traveling valve closely approaches the standing valve on the downstroke, thereby leaving little room for compression and expansion of gas. It is also important to avoid restrictions in the pump intake, and this is accomplished through use of oversized or streamlined standing valves and properly designed gas anchors. Large-diameter gas vent lines are used on all wells to avoid unnecessary back pressure on the casing head. Reduction of pressure at this point does much toward permitting gas to escape from solution in the oil before it reaches the pump intake.

Oil-well pumps.

Reciprocating plunger pumps of all standard types are used. Plungers equipped with cups or packing are most common in the shallower wells, while all-metal plungers are more common in Devonian wells. Up-to-date practice in operation of metal-plunger pumps usually calls for the use of a short extension nipple between working barrel and standing valve. The plunger and working barrel are then selected in such lengths that the plunger will stroke through the entire length of working barrel, projecting out about a foot at each end. This promotes even wear in the barrel, and when clearance becomes too great an oversized plunger can be run without removing the barrel. To date wear has been so little that this practice, while readily adopted, has resulted in no particular savings.

In the interest of reducing well pulling to the minimum, tubing pumps, which are nearly always installed for the large initial production, are replaced by insert or rod pumps when the production has declined to a point where it can be handled with a smaller plunger. The smaller pump reduces the pumping load and usually makes it possible to operate on a 24-hour basis, thereby avoiding shutdowns due to pumpoff. As a result, production is usually increased at this stage by installing the smaller pump.

Pulling equipment.

Devonian wells are generally equipped with derricks for well servicing because of their depth. On the shallower wells derricks are not considered justified, so masts are sometimes supplied at each well as permanent installations. However, these require guy wires, and in closely spaced areas where four twin wells are drilled at each location to produce the four pays, guy wires would be thick enough to prevent approach of the servicing trucks. Thus for the shallow wells practically all companies prefer to use servicing trucks equipped with masts that can be raised and lowered.

The view at the right shows electric-driven equipment used for unloading bulk cement from box cars. A conveyor screw feeds it into the hose, and it is carried by compressed air to the loading hopper. The view below shows steel-tank storage for dry bulk cement. Use of bulk cement has radically changed the appearance of the usual casing cementing job. At far right is seen a hopper installation for dispensing bulk cement to the drilling wells. Water-tight trailers haul the dry cement to the locations and meter it into the mixing hopper, handling 300 sacks per load

Prospects.

Excluding the possibility of deeper discoveries, it is believed that the Salem field is capable of producing 200,000,000 bbl. of oil. However, under present conditions of unrestricted and unregulated production, it is expected to fall considerably below that figure. It is believed that the ultimate production of gas will amount to 100 billion cu. ft. and of this about 40,000,000 cu. ft. has already been released from the reservoirs. Construction of gasoline plants, sorely needed at present, will make for better utilization of the gas, which is capable of yielding as much as 3 to 4 gal. of gasoline per 1,000 cu. ft. Opposition from the coal industry makes other utilization of the gas practically impossible in spite of its proximity to a large potential market.

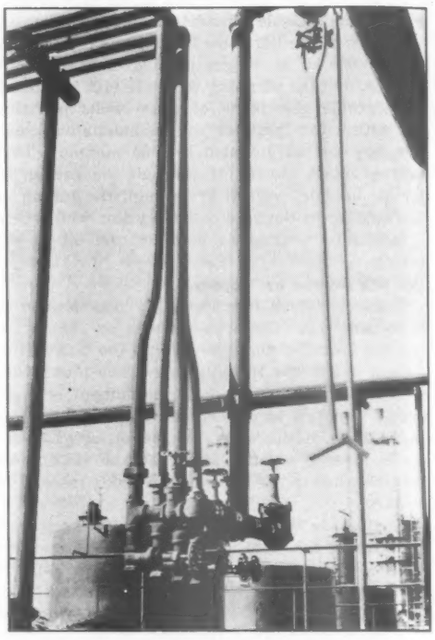
Operating Ideas

Gravity Provides Hookup Safety

More accidents to switchers occur when hooking on or disconnecting wells to powers or backcrank drives than from all other sources combined, records compiled by safety directors of several major companies show. In most of these instances the accident occurred when attempting to hold and couple or uncouple a moving part from a stationary one, with hand or fingers being caught between the two components of the hookup. One company, following a thorough check of accident possibilities, changed the procedure so that the switcher need never hold a moving part, nor interpose his hand between any two sections of a well drive. In the hookup shown, disconnecting the backcrank well, in this case to the left of the view, is accomplished by lifting the hinged knockoff block on the post to the horizontal. A notch in the leg permits the rod line to work through the block, while the larger clamp strikes the block, arresting rod-line motion and taking drive load off the inverted C-clamp, which automatically unhooks and drops to the ground. When placing this well on drive, the C-clamp is hooked to the eye in the dead end of the line, and held horizontal by the hand grip welded at the center of the C and extending downward far enough to clear switcher's hand and forearm from the travel of the eye in the end of the reciprocating line in the live end. Since the dead end is held stationary near the outward end of the hookup stroke, a slight rotation of the C-clamp upwardly around the motionless eye engages the clamp and places the second well on drive. As the rod line takes strain and begins to move, the weight of the well, which has held the knockoff block through rod tension against the eye clamp, is released and the knockoff block swings about its hinged end to hang downwards from the post, clear of operations until again needed for shutting down the well.

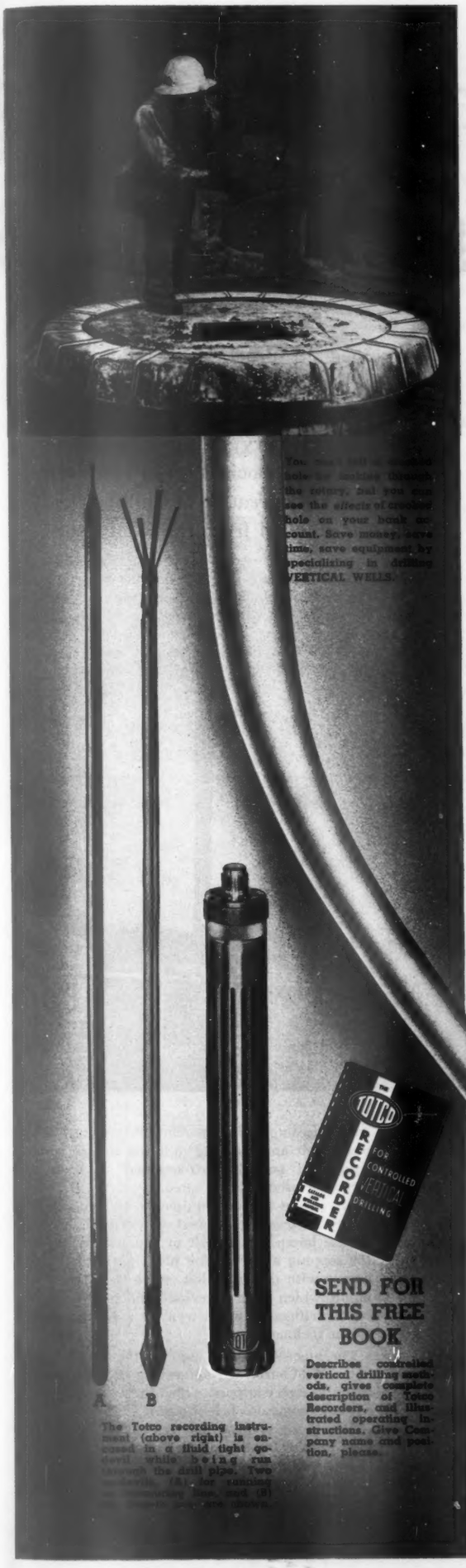
Swing and Expansion Joint Serve Jacketed Lines

Lines carrying residual products are often steam jacketed to permit ready flow of the oil in winter. However, this introduces complications in maintaining the lines tight and serviceable. One refinery handling asphalt uses jackets around its line and equips them with the conventional packed, stuffing-box type of expansion joints in which the inner or slip section of pipe serves as a guide while long threaded rods serve the dual purpose of permitting packing adjustment and restraining overtravel. The steam line which jackets the asphalt line is fitted with a 90° swing, automatically adjusting itself to shifts in the position of the movable end of the joint. Ball-and-socket joints, formed in the asbestos lagging of the line at each elbow enable the covering to travel with the pipe without breakage. Normally, the expansion joint itself is also lagged, the lagging having been removed from the joint shown as preliminary to repacking.



Dual Manifold Aids Fire Control

Centralization of the fire control, regardless of the snuffing medium, may save a life and certainly tends to save the properties in case of a fire. In one refinery each row of tanks in the farm is served by an identical manifold, with numbers on the manifold identifying the tank served by any particular line. Failure to identify tank by number is not serious, however, as the lines, beginning at the left, serve the tanks in like order, so that the left connection is for the nearest tank, the one at the right for that farthest away, and so on. Either foamite or steam can be used through the same manifold, a master connection permitting the attachment of the foamite apparatus, with further control to the tank desired through its numbered valve. To run steam in the tank, the master steam valve—overhead to prevent improper use, but provided with handy extension handle—puts live steam into the manifold, whence it is directed through the proper line by using the same valve as would be opened to use foamite. This simplification of fire-control stations reduces possibility of men or equipment losing time finding the proper station from which to fight the blaze. Often, in the case of tank fires, the first seconds saved or lost can easily mean the difference between a minor blaze and a serious conflagration.



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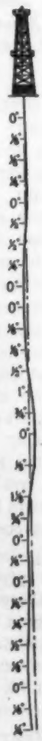
The one essential for controlled vertical drilling is this: The driller must be constantly guided in his selection of drilling weight and rotation speed by extremely accurate, consistent readings of vertical angles in the hole. This involves no sacrifice of drilling speed. Instead, BECAUSE the hole is vertical, each formation can be penetrated with the most efficient combination of weight and rotation speed; mechanical trouble and lost time are avoided; operating costs are reduced, and the well is completed in less time. It is the *modern* way of drilling.

WHY YOU NEED THE TOTCO RECORDER FOR CONTROLLED VERTICAL DRILLING

To be fitted for use in controlled vertical drilling the recorder that supplies the angle readings of the hole must meet these requirements: The record must be ACCURATE, clearly readable to ½ of one degree or less, and available to the driller immediately; the instrument must be so designed and constructed that it can be easily and quickly handled by any member of the drilling crew with uniformly good results; timing must be so accurately controlled that records can be taken with a stop on bottom of not more than 45 seconds; the instrument must maintain laboratory accuracy indefinitely and have an operating efficiency of 98% or greater under all circumstances; the equipment must be easily adaptable for all methods of running. The Totco Recorder meets all of these requirements because it was developed especially for controlled vertical drilling.

THIS IS CONTROLLED VERTICAL DRILLING

Controlled vertical drilling is the practice of using the information supplied by accurate vertical angle records taken at close intervals to direct the bit *straight down*. Through proper adjustment of drilling weight and rotation speed, the vertical angles are kept so small that the natural plumb bob tendency of the drill string is fully effective in keeping the course of the hole vertical. No directional trend is developed.



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Describes controlled vertical drilling methods, gives complete description of Totco Recorders, and illustrated operating instructions. Give Company name and position, please.

The Totco recording instrument (above right) is encased in a fluid tight gadevil while being run through the drill pipe. Two methods (A) for running on sandline, and (B) for running on wireline, are shown.

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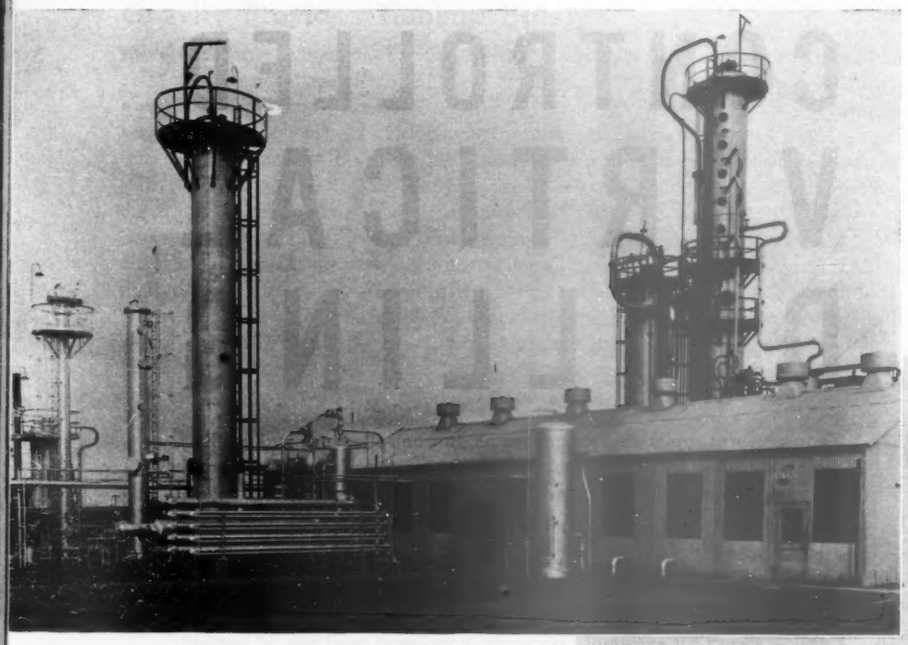
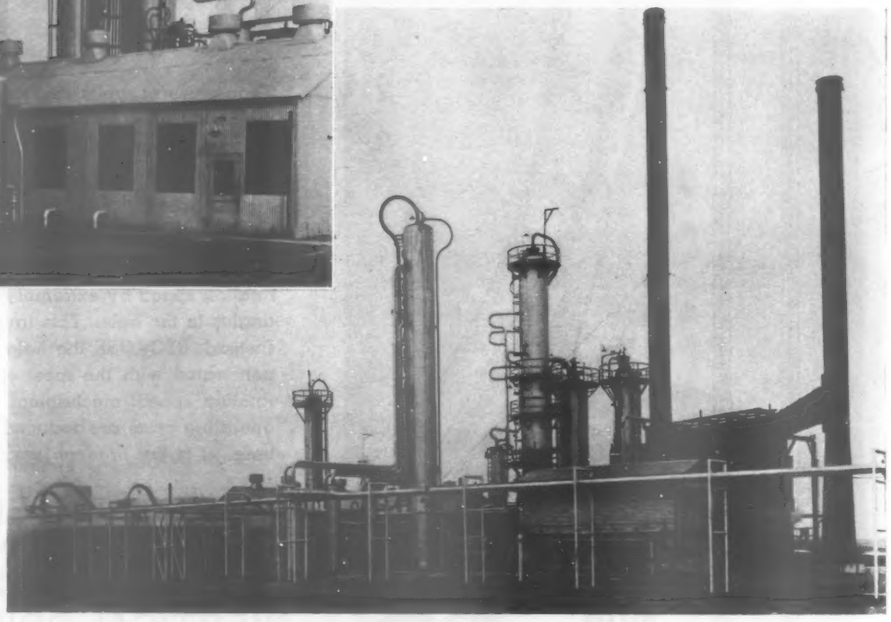
New Kansas Refinery Includes Modern Processing Equipment

By D. H. STORMONT

Equipped to crack and polymerize fractions above the 350-end-point gasoline recovered from the crude, the 3,000-bbl. refinery of the Consumers Cooperative Association has just been placed in full operation at Phillipsburg, Kans. It runs oil from the local fields.





Above: Distillation and stabilization equipment and transfer house. Right: Atmospheric distillation unit and 1,500-bbl. cracking unit

THE first refinery in northwestern Kansas was recently completed at Phillipsburg to give oil fields in Rooks, Ellis and Phillips counties of that state an immediate market for their production. The plant is of 3,000-bbl. daily capacity, its processing equipment including a midget polymerization unit, cracking unit and a tank-car Ethyl blending plant.

The refinery is processing 36-38 A.P.I. gravity crude oil produced in the Burnett field of Ellis County and from the Westhusin and Laton fields of Rooks County. A pipe line and gathering system, equipped with 10,000-bbl. field-storage tanks and pump stations, located in Rooks and Ellis counties, was installed to transport the crude to Phillipsburg. The pipe-line system is principally responsible for recent development in both the Burnett and Westhusin fields as it affords the producers in both areas a permanent outlet, which up to its completion was not available.

The pipe-line system is principally of 4½-in. o.d. seamless pipe of all-welded construction. The oil is gathered in the respective fields with small Worthington gathering pumps driven by Waukesha multicylinder engines. There are three main pump stations, each equipped with a 10,000-bbl. storage tank and 4 by 10-in. reciprocating-type pumps driven by gas and gasoline engines.

The refinery at Phillipsburg is located on a 160-acre tract, and major items of equipment located in the plant are as follows: A 3,000-bbl. single flash-type atmospheric distillation unit, a 1,500-bbl. Dubbs thermal cracking unit with gasoline stabilization and gasoline recovery system, a midget catalytic polymerization unit, transfer pump house, Hoover type dry-copper chloride treating system, a 10-car loading rack, modern tank-wagon loading rack, a steam-boiler plant, complete water-cooling and water-oil sewer facilities, a tank-car-type Ethyl blending plant, a modernly designed and equipped office building and laboratory, and storage tanks to accommodate the operations of a plant of this size.

Distillation Equipment

The topping plant is designed to take as an overhead production 350 end-point gasoline and is sufficiently flexible to take as side-stream products tractor distillate, 500 end-point kerosene of 40-41 gravity, and a cut of furnace oils or zero cold-test gas oil. The balance of the crude, which amounts to approximately 56 per cent, is used as charging stock to the cracking unit. The Dubbs unit is capable of making high yields of 400 end-point cracked gasoline and 70-octane number (C.F.R. method) and an 8-10 gravity residuum. In the accompanying photograph showing the topping plant and cracking unit the compactness of equipment and the "streamlined" type of construction used will be noted.

All of the process equipment is controlled by Brown instruments located on a centralized panel in the pump house. All of the pumps on both the topping and cracking plant are reciprocating pumps with the exception of the hot-oil recycling pump, which is an Ingersoll-Rand multistage hot-oil centrifugal pump driven by a noncondensing steam turbine.

The pipe-still heater used on the topping plant is the Mid-Continent Engineering Co.'s H-type side-firing heater, equipped with 7-in. supporting walls with a common brick casing. The heater is equipped for both oil and gas firing. The heater used on the Dubbs unit is a U.O.P. conventional-type upshot heater with 7-in. supporting walls and steel casing. This furnace is also oil and gas fired; both heaters being controlled from the instrument room.

Noncondensable gases from the cracking opera-

tion are picked up at a pressure of 200 lb. by an Ingersoll-Rand single-stage compressor, boosted to 550-lb. pressure and charged to the catalytic polymerization plant. The unit produces approximately 30 bbl. per day of polymer gasoline having an octane rating between 80 and 83 (C.F.R.). This product, of course, assists in raising the overall octane of the gasoline produced by using the polymer material as a blending fluid; also reducing the amount of tetraethyl fluid necessary in producing both "Q" and Ethyl gasolines.

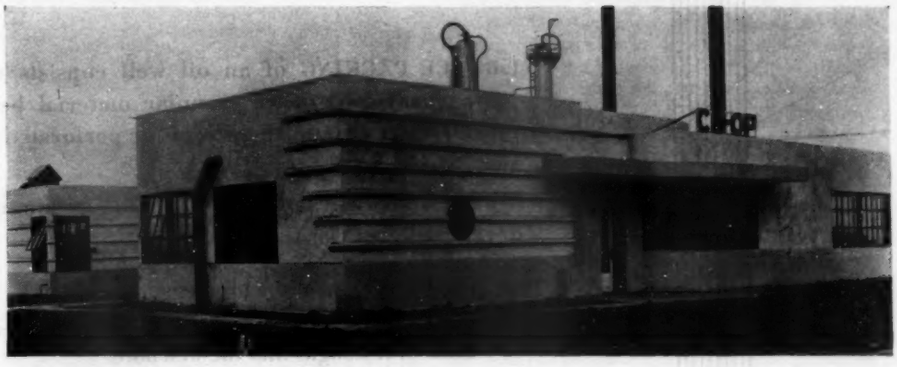
The poly unit is a conventional U.O.P. midget catalyst-type plant, consisting essentially of a heater, catalyst vessels, cooler and stabilizer. The gas from the compressor is charged through the heater where it is raised to temperatures of 350° to 400° F. The heater gas is then passed through the two catalyst towers, in series, filled with solid phosphoric acid upon whose surfaces the reaction takes place. The polymer product leaving the second vessel is cooled to temperatures approximating 165° F. and charged to the stabilizer where the polymer gasoline is withdrawn to storage and the spent gases recycled to the compressor.

Treating Plant

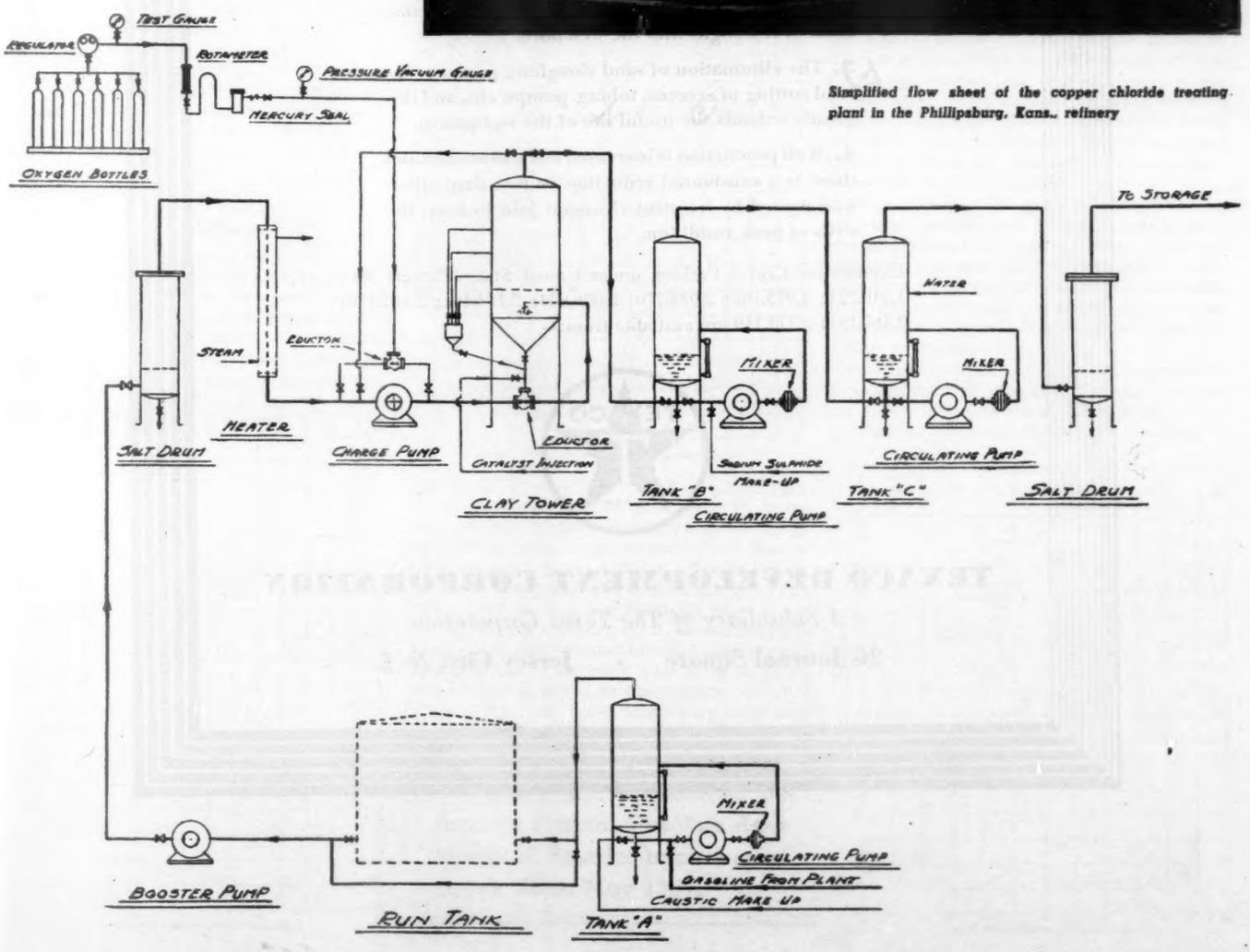
The gasoline produced by both the topping and cracking plant is separately treated in the Hoover-type copper chloride treating plant. The simplified flow sheet shows the conventional system employed. The cracked gasoline is first given a thorough caustic wash to remove any hydrogen sulfide which may be contained in the gasoline. It is then passed through a salt drum which is used for dehydration purposes. In order to thoroughly contact the gasoline with caustic and eliminate additional pumping facilities, an S-K jet is used to contact the caustic using line pressure.

The gasoline leaving the salt drum is passed through a steam heater where a constant temperature of the gasoline treated is maintained. The gasoline then passes under system pressures through a second jet, which brings the catalyst in contact with the gasoline to be treated. The discharge from the jet enters a cone-type settling vessel where the difference in specific gravities of the catalyst and the gasoline causes them to separate. The catalyst used in this process is a special ground copper chloride mixed in various percentages with 200-mesh Attapulgus clay. The

(Continued on Page 86)



Right: Instrument board in the new Phillipsburg, Kans., refinery. Below: Modern-type construction was employed in the office building and laboratory



Simplified flow sheet of the copper chloride treating plant in the Phillipsburg, Kans., refinery

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3. The elimination of sand sloughing prevents the sand cutting of screens, tubing, pumps, etc., and this greatly extends the useful life of the equipment.
4. Well production is increased and maintained and there is a substantial reduction in lost time otherwise caused by frequent clean-out jobs to keep the wells at peak condition.

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By E. G. HAMMERSCHMIDT
Texoma Natural Gas Co., Fritch, Tex.

NEARLY all freezing troubles in natural-gas pressure systems are caused partially or entirely by hydrocarbon hydrates, crystalline chemical compounds of methane, ethane, propane or isobutane in which water is present in simple molecular proportions. The natural gasoline and liquefied-petroleum-gas manufacturers are directly concerned with the hydrate problem wherever they are dealing with high-pressure gas at moderately low temperatures. Hydrate troubles in high-pressure gas systems may be permanently eliminated by removing the water condensate in the system, together with a sufficient amount of the water vapor in the high-pressure gas so that additional condensation cannot occur at minimum temperature and maximum operating pressures. In other words the dew point of the gas must be at least as low as the minimum temperature of the system when it is at maximum operating pressure. (Dew point is defined as the temperature of the gas at which liquid water begins to form). A partial dehydration, or dehumidification, of the gas is therefore sufficient to meet the operating requirements of a great many high-pressure systems. The operating cost of a dehumidification plant falls within the range 0.02 to 0.12 cent per 1,000 cu. ft., according to Shively.[9] Baker and Partridge[1] state that the expense of full-time operators at a dehumidification plant is by far the largest item of operating cost. They also indicate that in certain cases, these plants may be made fully automatic, in which case the services of full-time operators may be dispensed with. Clark[4] reports an operating cost of 0.116 cent per 1,000 cu. ft. for a combination refrigeration and brine-absorption plant. This cost was based on 1 year of operation at a daily throughput of 45,000,000 cu. ft. and during this period, half of the time of one man was sufficient to control operation, which is stated to be nearly automatic.

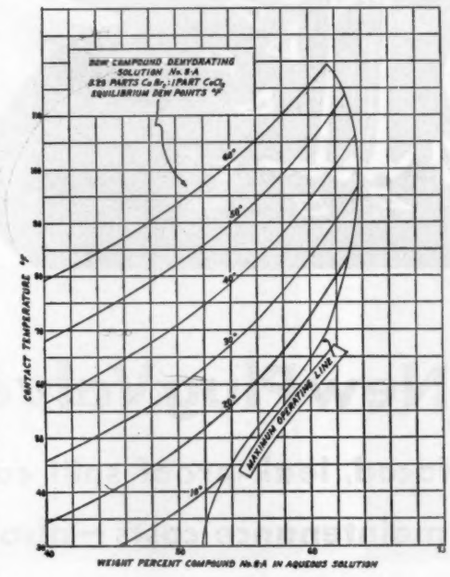
Liquid Absorbents

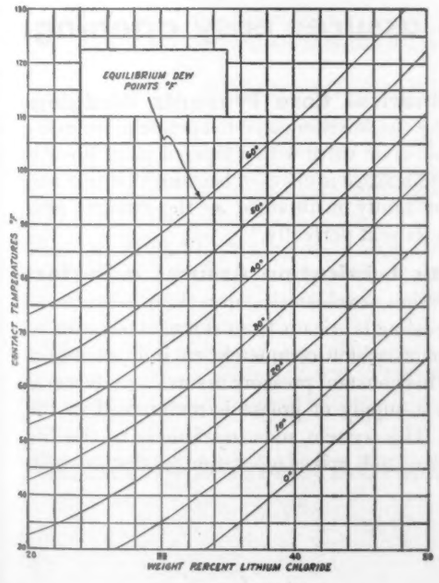
The magnitude of the dew-point lowering that may be effected by any aqueous hygroscopic mixture is dependent both upon the contact temperature and the nature of the hygroscopic material. The residual water-vapor content of the dehumidified gas is also affected by the total pressure on the system. The equilibrium dew-point curves for a number of hygroscopic solutions are presented herewith in graphical form. For comparative purposes the following tabulation has been prepared from data that were taken from these curves. This tabulation represents the maximum dew-point depression under equilibrium condition at the two indicated contact temperatures.

Solutions—	Dew-point depression at contact temp. of 90° F.	40° F.
Lithium chloride	67	*40
Dow-8A (calcium bromide-calcium chloride)	64	29
Zinc chloride	55	*40
Diethylene glycol, 96 per cent	51	45
Calcium chloride 40 per cent, glycerin 20 per cent	41	23
Glycerin, 85 per cent	33	30
Calcium chloride, 40 per cent	31	23

*Approximately.

In order to illustrate the effect of pressure on the residual water-vapor content, assume that equilibrium conditions have been established between the gas and a 40 per cent solution of calcium chloride at a temperature of 90° F. From the above tabulation, we see that a dew-point depression of 31° F. may be obtained, i. e., the equilibrium dew point will be 90—31=59° F. If the total pressure on this system is 200 lb. per sq. in. the residual water-vapor content of the treated gas will be 61.5 lb. per 1,000,000 cu. ft.; at 500 lb. per sq. in. the water-vapor content will be 26.3 lb. per 1,000,000 cu. ft. and at 800 lb. per sq. in. it will be 17.3 lb. per 1,000,000 cu. ft. These examples clearly show that a dehumidification plant is much more effective in stripping a gas of its water vapor, when it is placed on the discharge side of a compressor station rather than on the lower-pressure intake side, temperature conditions being the same.


DOW COMPOUND DEHYDRATING SOLUTION No. 8-A
8.25 PARTS $CaBr_2$: 1 PART $CaCl_2$
EQUILIBRIUM DEW POINTS °F
MAXIMUM OPERATING LINE
CONTACT TEMPERATURE °F
WEIGHT PERCENT COMPOUND No. 8A IN AQUEOUS SOLUTION



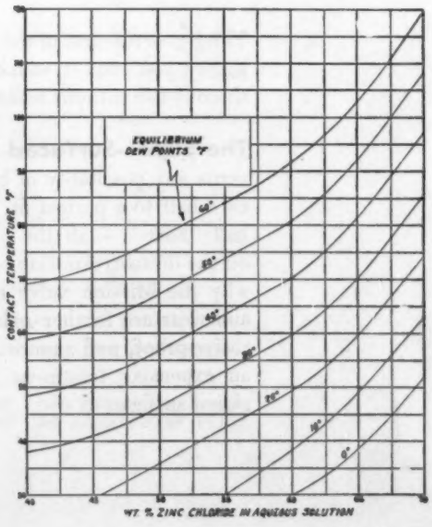
Of the various types of hygroscopic solutions that were mentioned above, calcium chloride brine and diethylene glycol solutions have been used most frequently on high-pressure natural-gas systems. The chief advantage of calcium chloride as compared with diethylene glycol appears to be in the lower cost of the former material. The annual solution-makeup requirements at three calcium chloride dehumidification plants ranged from 0.1 to 0.2 lb. $CaCl_2$ per 1,000,000 cu. ft. of treated gas. An aqueous solution of calcium chloride is a good electrolyte and care must be used in the selection of equipment in order to prevent electrolytic corrosion between dissimilar metals. The results of practical operation show that concentrated solutions of calcium chloride at atmospheric or lower temperatures are not corrosive in an atmosphere of natural gas unless the pH of the brine solution falls to 4.2 or less. The amount of dissolved iron in the system brine may be indicative of the corrosiveness of the solution as shown by the following analyses:

	Dissolved iron p.p.m. in 30% $CaCl_2$	pH
Plant No. 1	62	4.7
Plant No. 2	355	4.4
Plant No. 3	1,111	4.2

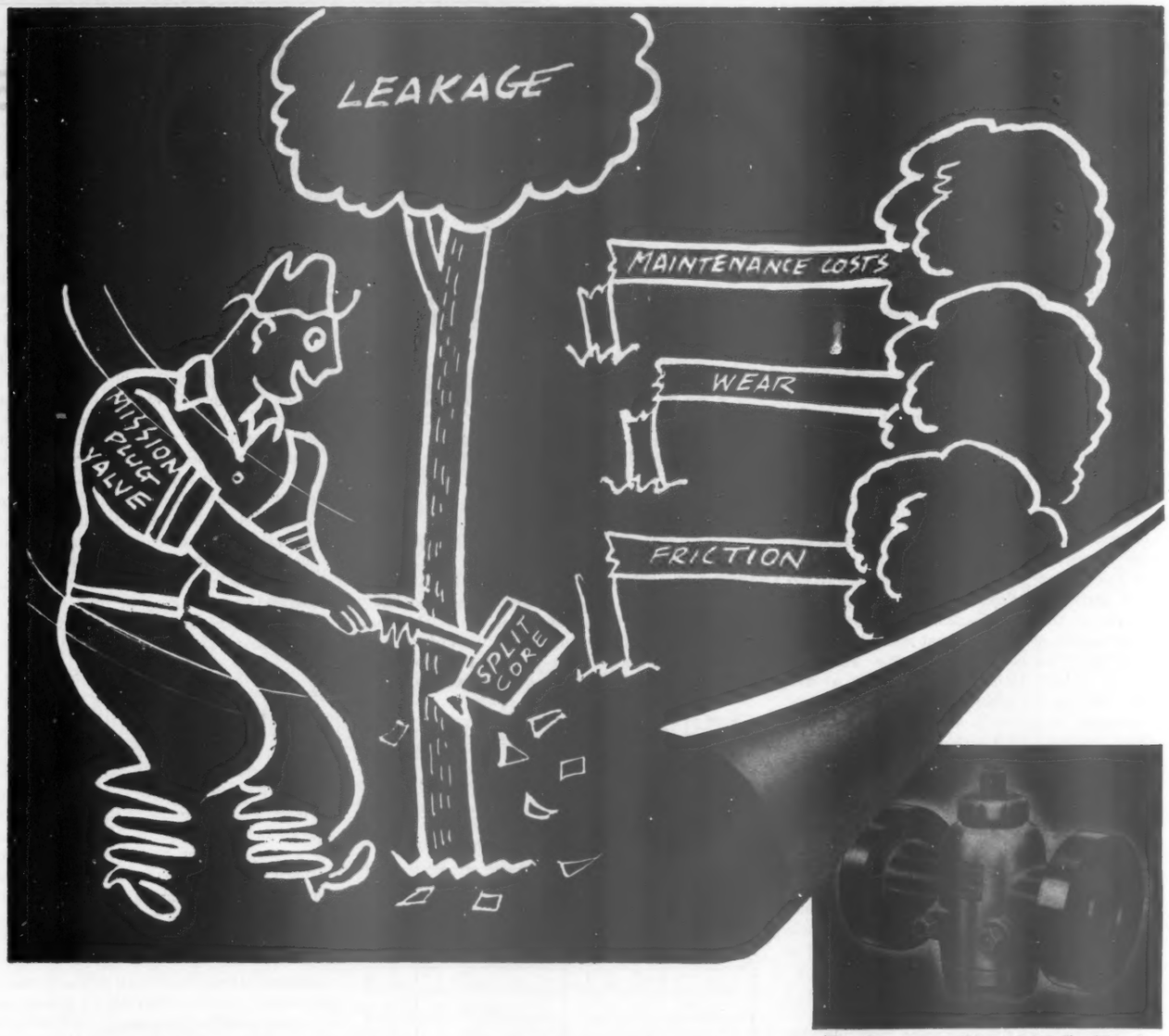
Some active corrosion has been observed in the contacting tower at Plant No. 3 but no appreciable corrosion has been found at Plants 1 and 2. Calcium chloride brine has been in continuous use at Plant No. 1 since August 1933. The only point in the system where active corrosion has been observed is in the high-temperature evaporating tank. Shively[9] reports that the average life of a cast-iron evaporator is about 5 years. The life of a steel evaporator is probably about 2 years.

Accumulations of oil such as absorption oil that may collect in the system during normal operation of a dehumidification plant should be withdrawn separately from the hygroscopic solution in order to prevent the formation of permanent emulsions that will occur if the two solutions are drained simultaneously from a high-pressure system and vented to atmospheric pressure.

The magnitude of the dew-point depression in a calcium chloride brine system at any fixed temperature is limited by the solubility of the calcium chloride at that temperature. It is necessary to



***N.G.A.A.*—Presented before the Natural Gasoline Association of America annual meeting in Tulsa May 15-17.**



Mission's New Plug Valve

Test Pressures: 4,000 to 10,000 lbs. Tested on drilling rigs, flow lines and Christmas trees for 24 months without a failure.

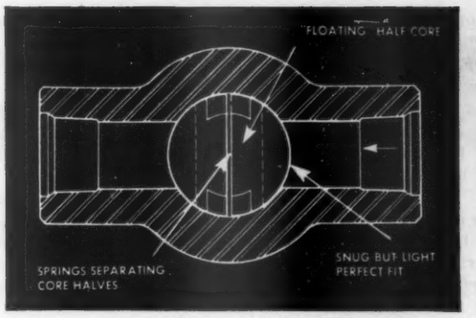
has a super-surfaced, leak-proof split core. This cuts down friction, wear and maintenance costs—also assures easy opening.

Three new features of the Mission Plug Valve will completely satisfy you that it will operate easily and give long, continuous use without leakage—even under severe conditions.

The Super-Surfaced Split Core. Splitting the core prevents any possibility of binding, and permits grinding each core half to a perfect fit. Under line pressure the upstream half "floats" — all the pressure and the only friction are on the downstream side of the valve. This is another reason why the Mission valve opens easily. In addition, friction and wear are further reduced, as the core is file-hard, corrosive-proof, and super-surfaced. This "super-surfacing" is an expensive treatment which gives the core a smooth, glazed surface.

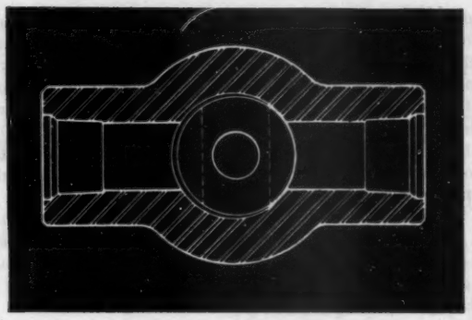
The Cylindrical Core Prevents Wedging. This enables the Mission valve to operate more easily than the old-style valve with a tapered plug. Wear is reduced and leakage is checked because a perfect seal can be constantly maintained as the straight plug always fits its seat perfectly.

Automatic Lubrication Assures a Perfect Seal. Mission, exclusively, uses line pressure to force the sealing lubricant from storage reservoirs to grease grooves which completely encircle each port opening. This constant pressure assures a perfect seal as long as a supply of grease is maintained in the reservoirs. This system adds indefinitely to the life of the valve and makes operation easier as well.



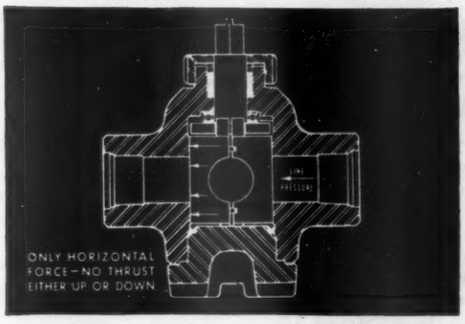
MISSION SPLIT CORE

Perfect contact with body allows instant seal under pressure. This protects surfaces from sand and grit, reduces cutting and wear, and reduces maintenance costs.



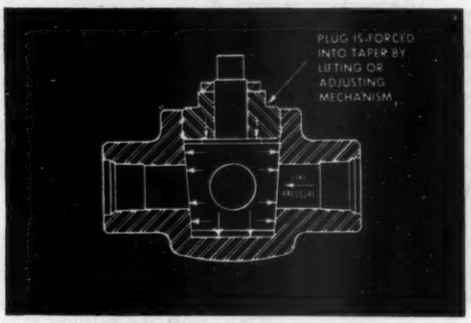
CONVENTIONAL SOLID PLUG

Unless wedged, a solid plug cannot fit its seat perfectly. As the plug wears, it cannot fit. This permits accumulation of sand and grit, accelerating wear, and greatly increases difficulty of operation.



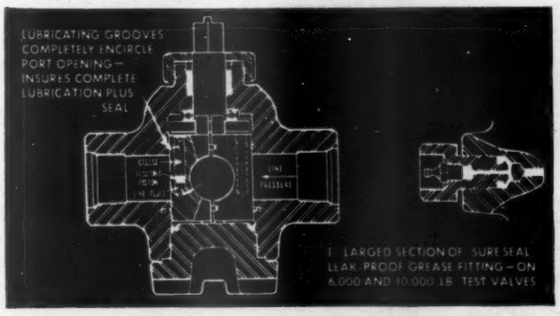
MISSION STRAIGHT CORE

Our cylindrical plug seats perfectly with minimum side wall clearance because of its design. A constant seal and complete lubrication are easily maintained. This increases valve life and assures easy operation.



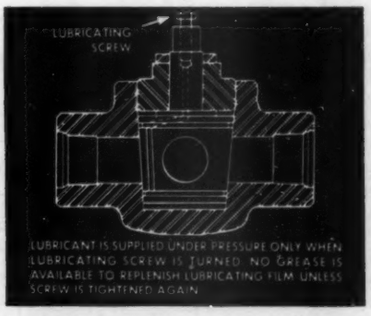
CONVENTIONAL TAPERED PLUG

A tapered plug also has vertical motion. It can seat perfectly only when wedged. Greater side wall clearance in operation makes a perfect seal difficult and allows opportunity for sand to accumulate under the seat. This increases friction and wear.


LUBRICATING GROOVES COMPLETELY ENCIRCLE PORT OPENING—INSURES COMPLETE LUBRICATION PLUS SEAL
LARGED SECTION OF SURE SEAL LEAK-PROOF GREASE FITTING—ON 6,000 AND 10,000 LB. TEST VALVES

MISSION AUTOMATIC "FULL-PORT" LUBRICATION

Line pressure against piston in each lubricating storage reservoir automatically forces and holds sufficient lubricant in place in the grease grooves around each port to both lubricate and form a perfect seal at all times regardless of pressure.


LUBRICATING SCREW
LUBRICANT IS SUPPLIED UNDER PRESSURE ONLY WHEN LUBRICATING SCREW IS TURNED. NO GREASE IS AVAILABLE TO REPLENISH LUBRICATING FILM UNLESS SCREW IS TIGHTENED AGAIN

CONVENTIONAL LUBRICATION

Lack of constant pressure to replenish the lubricating film as rapidly as necessary can quickly cause serious damage and leakage.

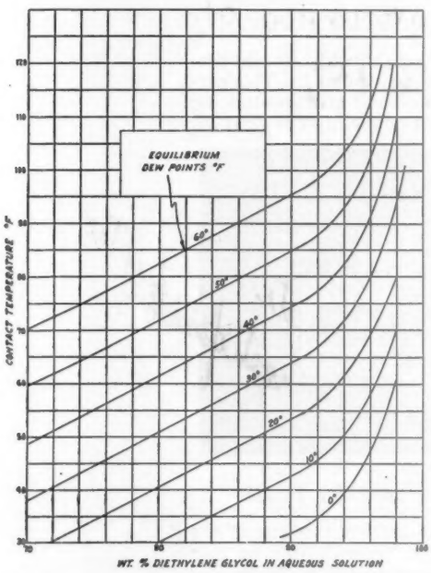
Mission Plug Valves are made with the same careful standards of metallurgical research, manufacturing precision and inspection that have made each Mission product a leader in its field.

Mission Plug Valves are manufactured in 2″, 3″ and 4″ sizes and in three grades—4,000, 6,000 and 10,000 lb. test pressures—and are available or can be ordered from leading oil well supply warehouses. Prices of each style and size compare favorably with those of the best plug valves available. Full details are available on pages 1716 to 1724 of The Oil Weekly Composite Catalog of 1940.

Install Mission Plug Valves under your most difficult conditions. They will save you time, labor and money.

MISSION MANUFACTURING CO. · HOUSTON, TEXAS NEW YORK EXPORT OFFICE: 30 ROCKEFELLER PLAZA

operate with brine concentrations that are well below the crystallization point in order to prevent plugging of the solution lines. However, an inspection of the calcium chloride equilibrium dew-point chart will show that sufficient dew-point depression can be obtained from most commercial operations providing that the contact temperature is low enough. Low-contact temperatures usually require the installation of refrigeration equipment which will materially increase the cost of a dehumidification plant. It may therefore be more economical to select a hygroscopic material that is capable of producing lower dew points than calcium chloride brine. A mixture containing 40



per cent calcium chloride, 20 per cent glycerin and 40 per cent water has been used for this purpose in at least two commercial plants.

The equilibrium dew point of this mixture is approximately equivalent to a saturated solution of calcium chloride. The addition of glycerin to supersaturated calcium chloride solutions is said to interfere with the crystallization of the calcium chloride in such a manner that it is precipitated in a finely divided form so that the resulting mixture is readily maintained in suspension in the solution.[6] The solution-makeup requirement at one of these plants is about 0.02 to 0.06 gal. per 1,000,000 cu. ft. where the plant throughput is 100,000,000 to 130,000,000 cu. ft. per day and the contactor pressure is about 200 lb. per sq. in. Baker and Partridge[1] report that operating troubles of a glycerin chloride plant have been negligible except when small amounts of hydrogen sulfide were present in the gas. The hydrogen sulfide was believed to have formed iron sulfide which acted on mineral seal oil that was present in small amounts and resulted in foaming of the solution.

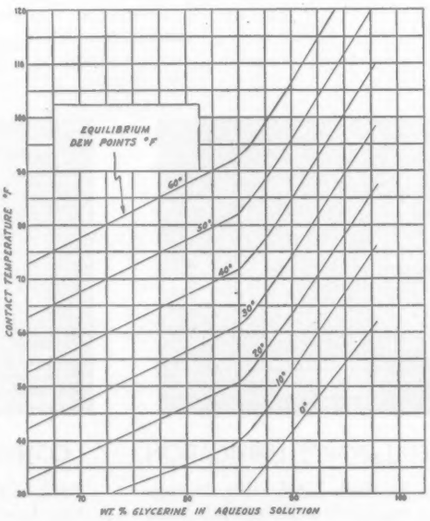
Diethylene glycol was introduced as a commercial dehumidifying agent in 1936 and at least 17 plants of this type are now in operation. Diethylene glycol is an organic liquid that solidifies at 14° F. A 95 per cent aqueous solution solidifies at about —40° F. The aqueous solution can therefore be used in practically all commercial operations without the danger of solidification that is present in the case of concentrated calcium chloride solutions. The dew-point lowering at any given temperature is greater than could be attained with any practical concentration of calcium chloride brine or with the 40 per cent calcium chloride - 20 per cent glycerin mixture. Operating difficulties of this type of plant are also reported to be nil. Baker and Partridge[1] reported that diethylene glycol absorbs some condensable hydrocarbons, e.g., 25 gal. per day of heavy gasoline was condensed with the water from the still outlet vapors, in a plant that was designed to treat 50,000,000 standard cu. ft. per day at 300 to 425 lb. per sq. in. operating pressure. Laboratory tests showed no absorption of gasoline at 80° F. and 750 lb. per sq. in. when contacted with a dry gas which contained 0.300 gal. per 1,000 cu. ft. The solubility of the gas at the same temperature and pressure was found to be 0.345 cu. ft. per lb. of diethylene glycol.[13]

Diethylene glycol and the ethanolamines appear to be mutually beneficial in a combination dehumidification and desulfurization plant, i.e., the glycol solution reduces the foaming tendency of the amine solution and the amine aids in the reduction of the dew point of the gas. The results of two seasons of operation of a combination plant of this type show that the solution makeup requirement amounted to about 0.1 gal. per 1,000,000 cu. ft. of gas.

Aqueous glycerin solutions have been used successfully for removing water vapor from gases although special precautions are necessary to prevent decomposition of the glycerin when removing the absorbed water from the diluted solution. This may be accomplished by vacuum distillation or by contacting the glycerin with an inert gas in the same manner that stripping steam is used in an absorption oil still. Smith[10] states that if the glycerin concentration is much greater than 85 per cent, the glycerin is too viscous and tends to cause foaming troubles.

Compound solution No. 8A, which has recently been placed on the market by Dow Chemical Co., is said to have remarkable dehumidification properties. This solution is a mixture of calcium bromide and calcium chloride in the proportion 5.3 parts calcium bromide to 1 part calcium chloride.

Solutions of zinc chloride also have remarkable dehumidification properties although the prob-



ability of acid corrosion has prevented its practical application up to the present time.

Lithium chloride solutions have been used for some air-conditioning problems but it has not yet been used in a large-scale gas dehumidification plant. Bichowsky[8] considers that lithium chloride is a superior dehumidifying agent for the following reasons: It is one of the most hygroscopic of all inorganic compounds; it has a greater drying rate than calcium chloride; it is nontoxic; it has a low freezing point and the material which separates out of a concentrated solution is either di or monohydrate which allows enough liquid to remain to prevent solidification; a concentrated solution will not become entirely solid until it has been cooled below —60° F.; corrosion with lithium chloride is considered to be less than with calcium chloride but no data are given to support this claim; boiling of lithium chloride does not hydrolyze the salt.

A typical example of the flow cycle of a liquid-absorption dehumidification plant is as follows: Wet gas is delivered through a liquid-separating chamber to the bottom of one or more contacting vessels where it passes upward through the contacting trays. Fresh solution is pumped through a liquid-to-liquid heat exchanger and thence to a water cooler and into the top tray of the contacting vessel. It flows from the base of the contactor to a surge tank, back through the liquid-to-liquid heat exchanger, thence through a steam preheater and into the feed plate of a stripping still. The solution is heated by means of steam coils in a reboiler. When glycerin is used, the steam heat is supplemented by allowing a stream of natural gas to pass through the heated solution and thus lower the reboiler temperature. This prevents decomposition of the glycerin. The water in the heated solution is vaporized and passes upward through the trays of the still where it is stripped of all hygroscopic material and is finally vented from the top of the still. The hot solution in the reboiler is then returned to the heat exchanger and the above cycle is repeated.

Solid Absorbents

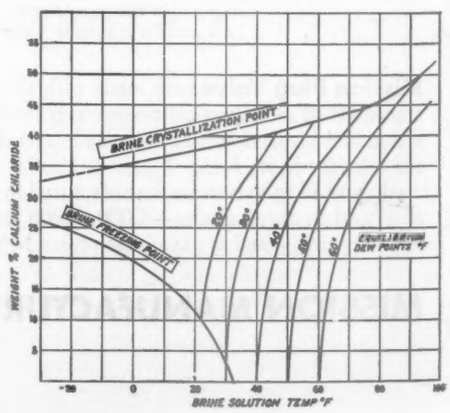
Solid calcium chloride is sometimes used for the partial dehydration of gas at individual wells in the field. The Solvay Co.[11] has described a practical method of application where it is recommended that the contactor be filled with calcium chloride lumps which are 1 to 2 in. in diameter. Granular or flake calcium chloride is not recommended because of the tendency of the grains to weld together under the effects of water vapor and thus cause channeling or even complete stoppage of the gas flow. The outlet gas will be in hygrometric equilibrium with the saturated solution of calcium chloride at the temperature prevailing at the top of the chloride bed.

Lump potassium hydroxide, applied in approximately the same manner as lump $CaCl_2$, has proved very successful in the removal of moisture from liquefied petroleum gases that are subjected to extremely low temperatures. Solid potassium hydroxide is more efficient than solid calcium chloride.

Solid Adsorbents

Solid drying agents that depend upon a physical attraction between the adsorbent and the condensate may be used for practically complete removal of water vapor. Shively[9] considers that the inherent advantages of solid adsorbent agents are great enough to warrant a considerable application of this type of material, e.g., the relatively small quantity of adsorbent required for the treatment of high-pressure natural gas makes possible an economical design of a dehydration plant. Where complete dehydration is not required, some wet

(Continued on Page 86)



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Uniform physical qualities, free from stresses and strains . . . concentricity held to extremely close tolerances . . . precision alignment assure users of

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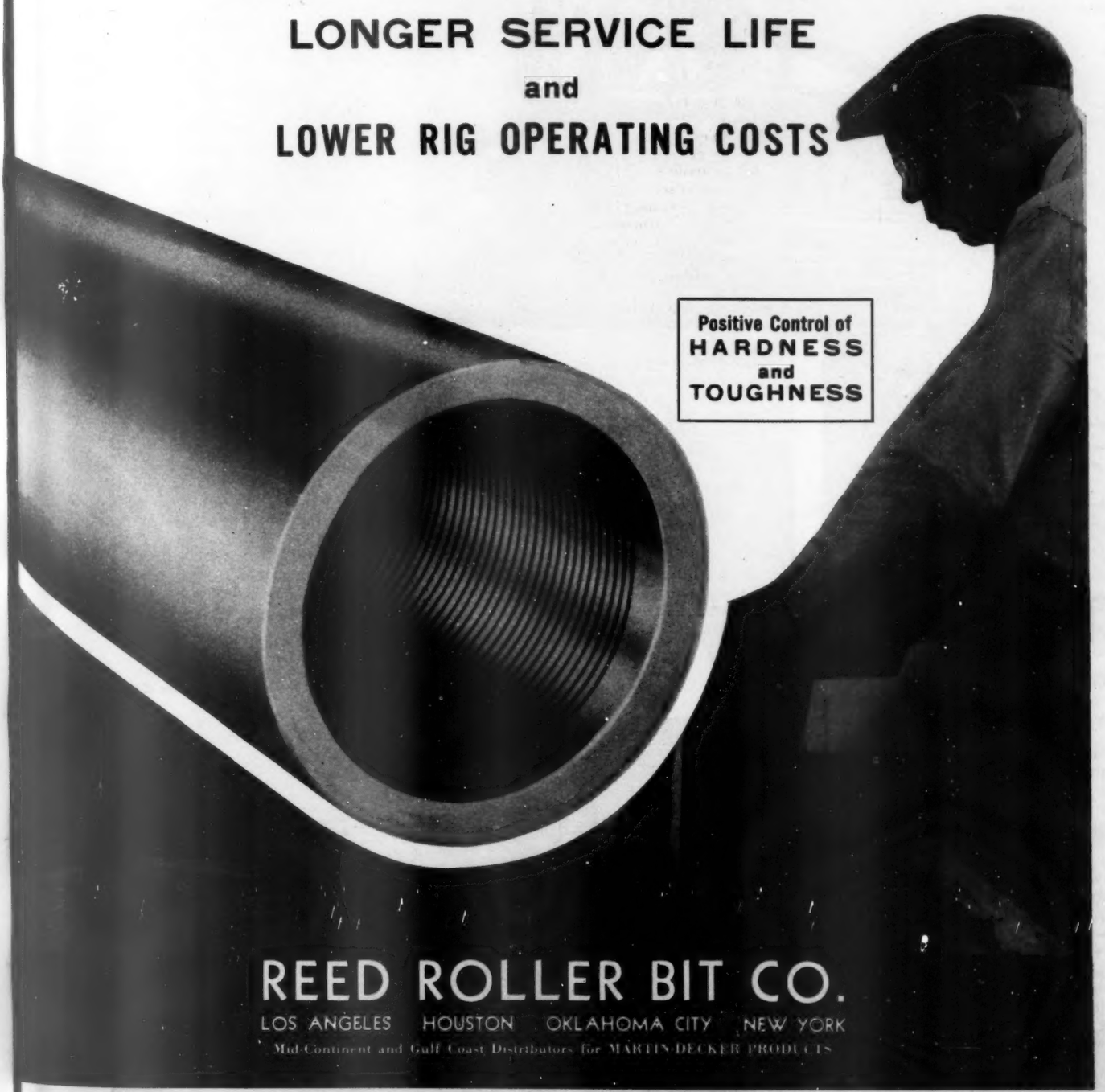


REED ROLLER BIT CO.

LOS ANGELES HOUSTON OKLAHOMA CITY NEW YORK

Mid-Continent and Gulf Coast Distributors for MARTIN-DECKER PRODUCTS

Difficult Completion Job Marks Opening of New Gas Pool

Right: Stabbing christmas tree into 8 1/4-in. water string after removing drilling nipple. Below: Christmas tree has been successfully stabbed, tied down, and gas is blowing out through 7-in. riser

By J. P. O'DONNELL

SUCCESSFUL completion of a wildcat well that blew open for 3 weeks before it was brought under control marked not only the opening of a new Oriskany sand gas pool in the New York-Pennsylvania area but also the conclusion of one of the most difficult completion jobs in the 10-year history of the northern Oriskany sand fields. The well, drilled on the Sam Crandall farm in Independence Township, Allegany County, New York, by the Empire Gas & Fuel Co., Ltd., of Wellsville, N. Y., was the first major discovery of the year in the northern Oriskany area. While blowing wild, the well had a flow measured at over 50,000,000 cu. ft. per day, the first well of this caliber in the New-York Pennsylvania fields since 1936.

The well is located about 4 miles southeast of the village of Andover and is midway between the Beech Hill field in Willing Township, discovered in 1938, and the Greenwood pool in Greenwood Township, one of the earliest of the Oriskany pools. The new field, if proven by further drilling, is expected to be similar to the Beech Hill field, having the same small closure underlain closely with salt water. The well, spudded in in February, drilled itself in April 3 and was not brought under control until April 23. A small rotary using 2-in. tubing for drill pipe, was used in completing the well, finishing the job of drilling out the mud and cement on May 1.

Elevation of the No. 1 Crandall is 2,284 ft. The Tully was encountered at 4,248 ft., or 1,964 ft. subsea; the Onondaga at 4,879 ft., or 2,595 ft. subsea, and the Oriskany at 4,912 ft., or 2,628 ft. subsea. These depths compare with those of the No. 1 Hilligas, the Beech Hill discovery well, as follows: Tully, 4,192 ft., or 2,046 ft. subsea; Onondaga, 4,778 ft., or 2,632 ft. subsea, and Oriskany, 4,822 ft., or 2,676 ft. subsea. It will be noted that while the No. 1 Crandall is higher than the No. 1 Hilligas, the interval between the top of the Tully and the Onondaga was greater in the Crandall well, while the interval between the top of the Onondaga and the Oriskany was greater in the Beech Hill well.

Several factors contributed to make the job of bringing the well under control one of unusual difficulty. Casing had not been run before the well drilled itself in and highly porous formations, as well as deep-shale gas cavities and crevices, carried off mud and cement when attempts were made to kill the well. Either a break in the water string or channeling around the shoe permitted mud and cement to escape also through shallow water sands.

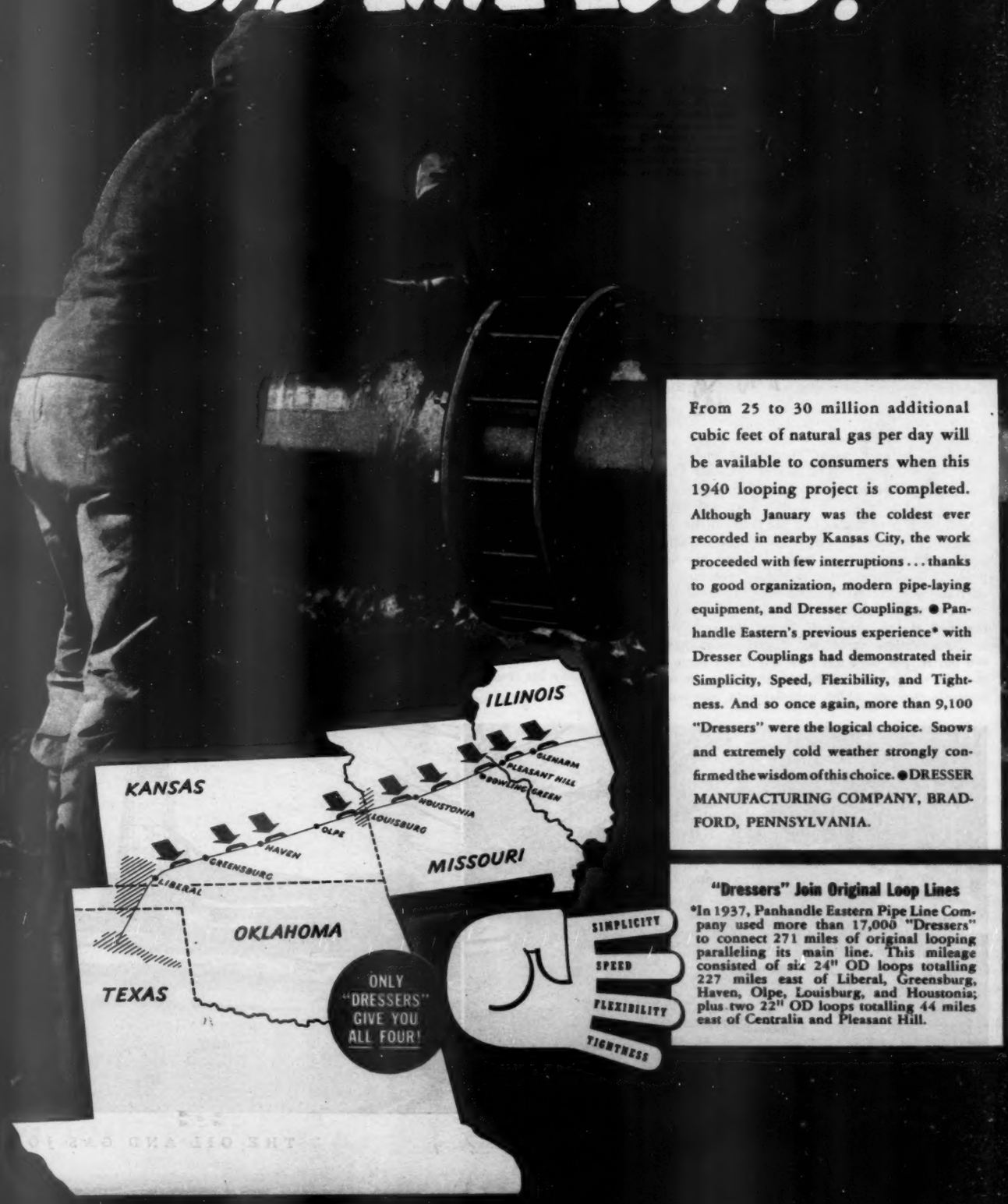
Bit Drilled Into Unidentified Shale

It is standard practice to run casing in these tests after drilling into the Onondaga which overlies the Oriskany, though some wildcat wells have been drilled into the sand without casing. It was planned to run casing in the No. 1 Crandall when the customary depth of Onondaga had been penetrated. However, after drilling through about 5 ft. of lime recognized as the Onondaga, the bit drilled into an unrecognizable soft limy shale. In the belief that the true Onondaga had not been reached, drilling was continued.

The thin section of lime was encountered at 4,879 ft. and the limy shale underlying it at 4,884 ft. In the soft black shales at 4,872 ft. an 8,000,000-cu. ft. pocket of sulfur gas blew down in 12 hours. Above the thin lime section a 2,000,000-cu. ft. pocket of sweet gas was found at 4,876 ft. and another similar pocket was found below the lime streak at ±4,885 ft. At 4,912 ft., 33 ft. below the top of the Onondaga lens, the shale became predominantly sandy but did not increase in hardness. This later proved to be the top of the Oriskany though it was higher than expected and

Gas has been conducted out side gates of christmas tree and vented through two 6-in. lines. Well is being tubed against slight back pressure by Otis Eastern Service Co.

"DRESSERS" JOIN 133 MORE MILES OF GAS-LINE LOOPS!



From 25 to 30 million additional cubic feet of natural gas per day will be available to consumers when this 1940 looping project is completed. Although January was the coldest ever recorded in nearby Kansas City, the work proceeded with few interruptions . . . thanks to good organization, modern pipe-laying equipment, and Dresser Couplings. ● Panhandle Eastern's previous experience* with Dresser Couplings had demonstrated their Simplicity, Speed, Flexibility, and Tightness. And so once again, more than 9,100 "Dressers" were the logical choice. Snows and extremely cold weather strongly confirmed the wisdom of this choice. ● DRESSER MANUFACTURING COMPANY, BRADFORD, PENNSYLVANIA.

"Dressers" Join Original Loop Lines

*In 1937, Panhandle Eastern Pipe Line Company used more than 17,000 "Dressers" to connect 271 miles of original looping paralleling its main line. This mileage consisted of six 24" OD loops totalling 227 miles east of Liberal, Greensburg, Haven, Olpe, Louisburg, and Houstonia; plus two 22" OD loops totalling 44 miles east of Centralia and Pleasant Hill.

did not present the usual hard caprock. The drillers were still not certain they were in the Oriskany when they struck gas at 4,916 ft., believing it to be merely a pocket similar to the three encountered higher. The first show in what was later determined to be the Oriskany was encountered at 11 a.m. on April 3. Drilling was suspended and the tools were pulled. The gas flow then gaged 1,000,000 cu. ft.

At 3 p.m. it had increased to 3,000,000 cu. ft., at 8 p.m. to 8,500,000 cu. ft., at midnight to 14,000,000 cu. ft., at 3 a.m. to 30,000,000 cu. ft., and at 3:20 a.m. it hit its peak with a flow measured at over 50,000,000 cu. ft. per day. At 7:45 a.m. it began to spray salt water. The only equipment in the hole at the time was 29 ft. of 10-in. drive pipe and a normal water string of 406 ft. of 8⅝-in. o.d. pipe set on a shoe and not cemented.

Operations to control the well were started late in the evening of April 4. On April 5, after an Otis-Eastern crew had been called in and the 10-in. cut off near the cellar floor, Halliburton pumped 48 sacks of cement between the 8-in. and 10-in. to cement in the former. This cement, judging from later findings, went out into the shallow-water zones instead of setting around the pipe. Next an assembly of 8-in. die nipple swedged into 7-in. with two 4-in. riser nipples was stabbed and screwed into the 8-in. and tied down to the cement block in the cellar floor. The 4-in. outlets, swedged out to 6 in., were taken out of the rig, equipped with high-pressure control gates and risers at the end. Then, after gas could be diverted through these blowoffs, two Cameron and one Hinderliter tubing heads were installed above the 7-in. main gate and 4,900 ft. of 2½-in. upset tubing run into the well. In the meanwhile another Halliburton truck arrived from West Virginia and Otis Pressure Control, Inc., eastern division's Gardner-Denver mud pump was brought in from the Music Mountain field.

On April 7 the first attempt to kill the well was made. Six hundred barrels of water were mixed with 9,000 lb. of Aquagel, 4,900 lb. of Baroid and 70,000 lb. of fire clay to form a 10.5-lb. mud which was pumped down the 2½-in. tubing after quieting the well as much as possible with 200 bbl. of water. Back pressure of 500 lb., held on the 8-in. during the killing process, proved to be too much and either unseated or broke through the 8-in. pipe. This allowed mud to escape through the shallow-water veins, causing loss of circulation, and the well soon cleaned itself. Open flow of the well at this time and during the remainder of the operations varied but slightly from 45,000,000 cu. ft. per day, the flow cut down some by the 4-in. outlets and bends in the pipe to the 6-in. blowoffs through which measurement was made. Back pressure due to these impediments ranged around 150 lb.

The loss of circulation through or around the 8-in. casing quickly showed up in nearby water wells and springs. Mud, salt water and gas shot 75 ft. into the air in slugs from an abandoned well 700 ft. away, bubbling springs broke out in the adjacent fields and road and two geyser-like holes were opened in the ground within 100 ft. of the rig floor. The following 7 days were spent in attempts to restore circulation by plugging off the shallow sands, installing a split sleeve between the 8-in. and 10-in. with a 2-in. vent and in keeping salt encrustation from the inside of fittings by washing the well out with fresh water. Materials used in this process of intermittently slugging batches of cement, Aquagel, Fibretex between the 8-in. and 10-in. included 144,000 lb. of cement, 4,920 lb. of Aquagel, and 1,900 lb. of Fibretex.

By April 13, although the highly porous water sands had not been completely plugged, enough circulation had been restored to allow holding a back pressure of 200 lb. without increasing visible surface leakage. A second batch of mud consisting of 1,300 lb. of Aquagel, 1,400 lb. of Baroid, and 188,000 lb. of fire clay had been mixed on April 12 preparatory to mudding off again. Operations for the following 4 days were hampered by a drifting 6-in. fall of snow and freezing weather, during which time a trial "killing" with plain water was made without success, but showing that circulation had been restored sufficiently to permit another mudding-off process. On April 15 J. C. Luccous, of Otis Pressure Control, Inc., arrived by plane from Dallas, Tex., to take charge of operations.

April 16 saw the second attempt at killing the well with the previously mixed mud. The failure of this endeavor definitely proved a larger input capacity was needed to overcome the loss of circulation then existing. Accordingly the next 4 days were spent in pulling the 2½-in. tubing, changing the tubing heads to fit 4-in., and running 4,900 ft. of 4-in. tubing into the well. During this time other slugs of mud and cement were turned into the 10-in. to further reduce the shallow leaks and the well was washed with fresh water. Considerable difficulty was experienced at first in running the 4-in. as the 8-in. to 7-in. swedge had salted off too tight to allow the 4-in. to pass. Additional fresh-water washing removed this difficulty. In the interim of running the 4-in. mud pits and fresh-water storage pits were increased in size and two more Halliburton trucks were obtained from Illinois. Before running the

Right: After first unsuccessful attempt to kill well, and failure of water string, two additional vent lines are installed to lower back pressure in water string. These were later connected to vent lines discharging farther from well. Lowest vent is from braden head between 8 1/4-in. and 10-in. drive pipe

Left, below: Water storage tanks and pond dug for water storage

Right, below: Mud pit with capacity of 2,400 bbl. Notice return line from well at right

4-in. tubing and making two 4-in. intake connections to it (the 2½-in. tubing had only one intake) two 3-in. taps were made in the 8-in. casing just below the 4-in. cross outlets. These were swedged out to 4-in. equipped with high-pressure gates and led out under the rig as additional blowoffs. They were also equipped with pressure-gage outlets as a means of determining the critical back pressure on the well below any horizontal outlets. The four outlets above this (two 4-in. and two 3-in.) were all swedged out to 6-in. and laid out along the ground with vertical risers at the ends, bringing the four blowoffs in a group together about 200 ft. from the rig. This made the total number of possible outlets seven and the surface hookup as follows:

Two 4-in. intake lines connected to the 4-in. tubing from the pumps.

Two 3-in. blowoffs from the tubing heads, swedged out to 6-in.

Two 4-in. blowoffs from the 7-in. cross below the tubing heads and main gate, swedged out to 6-in.

Two 3-in. taps out of the 8-in. swedged out to 4-in. and led out under the rig floor.

One 2-in. blowoff connected to the split sleeve between the 8-in. and 10-in. and led out under the rig floor.

All critical-pressure points were hooked up with pressure gages.

With ample intake and outlet capacity, sufficient pumping power, and enlarged mud and water storage space ready, a third attempt to kill the well was made on April 21. On this run the Otis mud hog pumped mud made up of 44,800 lb. fire clay, 4,500 lb. Aquagel, and 300 bbl. water into one 4-in. intake line while simultaneously the four Halliburton pumps fed 175,000 lb. of cement into the other 4-in. intake. Holding not over 200-lb. back pressure, this 13-lb. mud and cement mixture killed the well in 35 minutes and over a third of the mud remained in the pit. The well remained quiet for over an hour and then started building up pressure again as crevices in the sand and doubtless also in the soft shales where the gas pockets had occurred "stole" the fluid and lowered the hydrostatic head below the pressure of the gas in the sand, allowing gas to come up through the mud and build up pressure at the top of the well at a rapidly increasing rate. By the time the pumps could be set up and started again, the well had come back too far and, although the rest of the mud and thereafter water was pumped into it, control was lost and the well cleaned itself out again.

The behavior of the well in cleaning itself after this run, the quantities of mud pumped which never returned, and the fact that the flow had been reduced to 25,000,000 cu. ft. indicated clearly that fluid had been lost in crevices near bottom and that some of the cement and mud had plugged those crevices in the sand. Therefore operations were immediately started for another attempt so outlined and planned as to first kill the well, then plug the crevices to prevent loss of circulation, then cement in the 4-in. on the outside, and follow up with mud circulation at the top on the outside of the 4-in. to maintain fluid head. Knowing from the past attempt that the well could be killed again for at least an hour, a quick-setting mixture of Calseal and water was designed to set in 1½ hours.

Final Attempt Successful

Without further mechanical changes other than an intake line to get between the 4-in. and 8-in. a fourth and final attempt was made on April 23. In the mud pit 120,000 lb. of fire clay and 12,000 lb. of Aquagel were mixed with water, and in a portable mixing tank 1,200 lb. of Aquagel and 500 lb. of Fibretex were made ready. In killing the well Otis equipment pumped mud while four Halliburton trucks mixed and pumped 175,000 lb. of cement. Half of the Aquagel-Fibretex mixture was put in the hole as soon as the flow of gas started to decline rapidly, followed by more mud and cement. With the decreased open flow the well was dead in about 30 minutes. When this was assured Halliburton pumped in the rest of the Aquagel and Fibretex mixture. Whereas pump pressures in all other attempts and previously in this fourth attempt had been practically zero, pressure built up immediately after the plugging Fibretex-Aquagel hit bottom and increased during the succeeding operations to a maximum of 1,250 lb. The Fibretex was followed by more mud and cement and the 4-in. was then washed out by pumping water through it to remove all Aquagel, as the latter is an accelerator in the setting of Calseal. Then two Halliburton trucks pumped 18,800 lb. of Calseal into the 4-in., displacing this from and washing inside the 4-in. with water and then mud in order to get the Calseal out below the bottom of and around the outside of the 4-in., to remove any possibility of its setting up in the 4-in., and to regain the heavy fluid head inside the 4-in. The 4-in. was then shut in with pressure on the head and mud circulation started through surface connections at the top of the 8¼-in. to maintain the fluid level and keep the Calseal in position while setting. After 3 hours had elapsed, it was assumed the cement had set and the 4-in. cemented in as casing, but the Otis pump maintained the fluid level outside the 4-in. for 5 hours longer. The following morning it was evident the well had been successfully killed, as the fluid level outside the 4-in. had not fallen appreciably.

Following completion of the killing and cementing process, operations to bring the well back under control were begun by running a rock bit on the bottom of 2-in. upset tubing into the 4-in. casing. Rotary drilling equipment was brought in and drilling out started, using left-over heavy mud as circulating fluid. The plug was set up 4 ft. below the bottom of the casing, or between 4,902 ft. and 4,906 ft. This remained hard down to 4,916 ft. where a soft pocket of 6-in. was encountered at what had previously been the total drilled depth of the hole and the first gas pay. Below this setup cement and Calseal existed for 4 ft. to 4,920 ft., where sand was found with the drill, evidence that the well had drilled itself in 4 ft. deeper. At this point the fluid was swabbed out of the 2-in. Only a small show of gas existed, the small 3¾-in. rotary hole through the plug evidently being surrounded by a thick wall of plug where the well had also drilled in at the sides between 4,916 ft. and 4,920 ft.

In the first foot of sand drilled to 4,921 ft. approximately 50,000 cu. ft. of gas was found. In the next 2 ft. drilled this increased to 1,600,000 cu. ft. and rocked up overnight in the 2-in. to 1,590 lb. per sq. in. The well was completed at a total depth of 4,923 ft. on May 8, 1940.

In the four attempts to kill the well and the operations attending the job five high-pressure pumps were used (four Halliburton trucks and one Otis Eastern), two portable mixing tanks, five 120-bbl. water tanks, one 65 by 80-ft. mud pit, four water-storage pits and three small water-lift pumps, one Otis Eastern well-service truck for tubing, and all Empire trucks available for hauling materials. Fluid and mud mixed and used totaled 249 tons of cement, 211 tons of fire clay, 12 tons of Aquagel, 1½ tons of Fibretex, 9 tons of Calseal, 3 tons of Baroid, and thousands of barrels of water. The scene at the well resembled a miniature mushroom village with hastily built sheds for storing materials, heated enclosures for workmen and watchmen, telephone communication, and a housed electric-light plant of four portable generators supplying 8 to 10 floodlights.

Left: Otis Eastern mud pump and four Halliburton trucks ready for final successful attempt to kill well. Right: Ready to go. Otis pump handled mud and Halliburton pumps handled cement, to increase weight of fluid

Economics of Liquefied Petroleum Gases

THE market conditions now confronting the natural-gasoline industry have brought home to the manufacturer the desirability, if not necessity, of utilizing hitherto waste products as a means of bolstering the dwindling profits from sales of his major product. . . .

In order that a logical picture of the problem can be drawn, it will be necessary to review somewhat the history of the liquefied petroleum-gas industry and to dwell to some extent upon the present and potential uses of the products.

In the early days of the industry the recovery of propane and excess butanes was recognized as undesirable owing to the high vapor pressure of the product in which they were contained. . . .

In spite of the rapid growth of the liquefied-gas industry, those responsible for its progress have proceeded cautiously in every phase of development. . . .

TABLE 1—METHOD OF TRANSPORTATION IN MARKETING OF LIQUEFIED PETROLEUM GASES

(Volumes in thousands of gallons)

	Propane	Butane	Propane-butane mixture	Total
1937				
Bulk	22,650	43,593	42,589	109,132
Cylinder	23,824	1,806	4,105	29,735
Total	46,474	45,399	46,694	138,867
1938				
Bulk	22,420	50,050	53,665	126,135
Cylinders	31,710	2,718	2,385	36,813
Total	54,130	52,768	56,050	162,948

Let us look for a moment upon the present market for liquefied petroleum gases. Fig. 2 is a study of the consumption of liquefied petroleum gases, represented by figures taken from U. S. Bureau of Mines' mineral reports for 1937 and 1938 and presents a good picture of the trend of these years. It will be noted that the total sales of liquefied gases in 1938 increased 24,491,000 gal., or 17.7 per cent over that of the previous year. . . .

N.G.A.A.—Presented before the Natural Gasoline Association of America annual meeting in Tulsa May 15-17.

By JAMES W. VAIDEN
Skelly Oil Co.

An interesting picture of the trend in the method of transportation used in marketing of the liquefied gases is shown in Table 1, taken from U. S. Bureau of Mines reports for 1937 and 1938.

An increase in cylinder shipments of propane is noted in 1938, constituting 58.6 per cent of the total shipments, as compared with 51.4 per cent for the same method in 1937. Due largely to the widening use of tank trucks, bulk shipments of butanes predominated in both years for a total of about 96 per cent of the total shipments.

Another matter of interest is the regional distribution of liquefied gases as shown in Table 2, also taken from U. S. Bureau of Mines reports. These data show an increase in the total sales of liquefied gases on the Pacific Coast of 17.9 per cent in 1938 over the previous year for a gain of 5,340,000 gal. . . .

Since 1938 the advent of polymerization, alkylation, and similar processes has changed the picture that liquefied petroleum gases present to the natural-gasoline man, and created the impression in some quarters that a profitable market now exists for any one and all who can manufacture propane and butanes. . . .

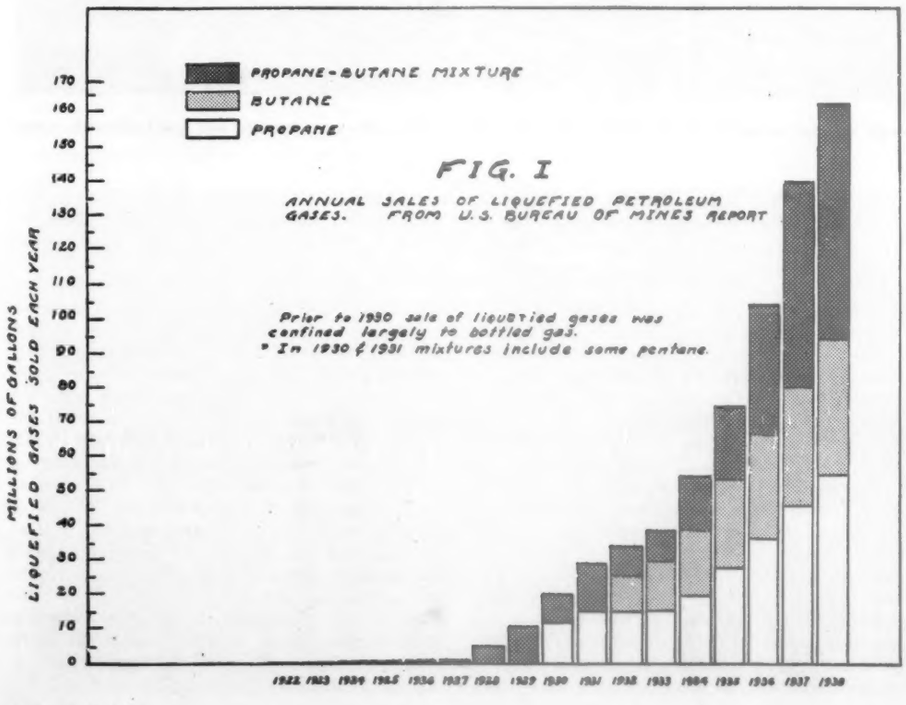
TABLE 2—REGIONAL DISTRIBUTION OF LIQUEFIED PETROLEUM GAS

(Volumes in thousands of gallons)

	Propane	Butane	Propane-butane mixture	Total
1937				
Pacific Coast area	6,266	5,447	18,085	29,798
All other areas	40,208	39,694	28,609	108,769
Total	46,474	45,399	46,694	138,567
1938				
Pacific Coast area	6,983	8,072	20,083	35,138
All other areas	47,147	44,696	35,967	128,810
Total	54,130	52,768	56,050	163,948

Let us briefly consider some of the problems of manufacture. The butanes and lighter fractions separated by fractional distillation from the natural gasoline will probably consist of iso and normal butane, propane, ethane, and maybe a trace of methane. In addition, there may be hydrogen sulfide present, and there may also be water vapor. Such a mixture is not suitable for sale as liquefied petroleum gas for any recognized use. About its only value might be as fuel gas along with the methane and ethane passing through the plant absorbers. Before this mixture could be marketed as liquefied petroleum gas in even its crudest form, the hydrogen sulfide and water vapor must be removed along with any methane that might be in the mixture and all but a very small amount of ethane. . . .

There are several methods by which the production of the liquefied gases may be increased such as refrigeration, vapor rectification, etc., but any method employed will call for extensive rebuilding and/or additions to the average plant with attendant high investment and increase in operating costs. Reliable cost data show that 95 per cent butane recovery will require an additional investment of $4 per gallon of gasoline recovered in areas having gas very rich in butanes, such as East Texas, and that this figure will be increased to around $15 per gallon of gasoline in most other areas. This is for plant changes only and does not include additional costs in gathering system. Generally speaking, it will be found that the extraction of propane and butanes, beyond the limit obtained incidental to efficient recovery of natural gasoline, is likely to prove uneconomical. . . .



Propane as Domestic Fuel

The marketing of propane as a fuel for domestic purposes began about 1920, but little progress was made until 1927 when the sales began to mount rapidly. In 1922 there were probably less than 20,000 domestic consumers of this fuel using a little more than 222,000 gal. per year. By the end of 1937 the number of customers increased to approximately 400,000 with a consumption of 30,436,000 gal. of propane per year. Since 1937 the growth of the domestic use of propane has continued its upward trend with the result that consumption, according to reports of the U. S. Bureau of Mines, has reached 37,556,000 gal. in 1938. It has been estimated that consumption will con-

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tinue to increase for several years before any degree of saturation is reached. . . .

A detailed study of the economics of distribution of propane as domestic fuel has been made by Thomas[1] who shows that the marketing and servicing of "bottled" gas does not become profitable until around 1,500 customers have been obtained for each marketer. . . .

In spite of the ever-narrowing margin of profit extracted from the business, and the necessity for large capital expenditures, a continued increase in sales is expected[2] to add approximately 100,000 customers per year for the next several years, adding approximately 10,000,000 gal. to the propane consumption each year. Efforts are also being made to increase the consumption in established territory by load building through the medium of water heating, refrigeration and space heating.

Summing up the situation as regards the marketing of propane as domestic fuel, the following points stand out:

1. The marketing of propane as a domestic fuel has been well established over a large portion of the United States.

2. Adequate financing is a requisite of any marketer in this field. Heavy investment in equipment and long-term returns are characteristic of present conditions.

3. Increased competition within the industry, as well as from other fuels, makes even lower profits and heavier investment a possibility.

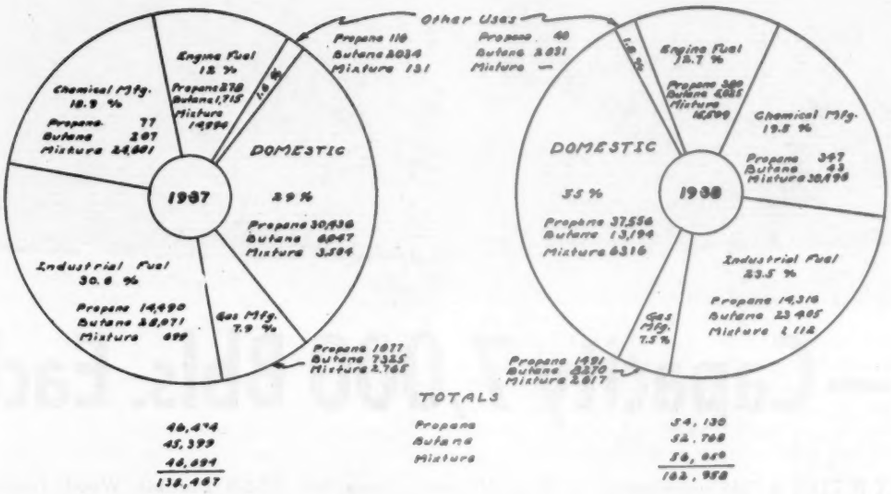
4. Such areas of this country as have not been extensively exploited for the marketing of propane as a domestic fuel offer handicaps in the way of sparse population, with attendant high cost of distribution or difficult competition with other fuels.

It would therefore seem that the marketing of propane as a domestic fuel offers small possibilities of profit to those not already engaged in the business.

FIG. II

UTILIZATION OF LIQUEFIED PETROLEUM GASES

Volumes In Thousands of Gallons



Butanes as Domestic Fuel

The use of butanes, or propane-butane mixtures, as domestic fuel has increased to a considerable extent on the Pacific Coast, and in the South and West where climatic conditions favor, to some extent, the use of a less volatile fuel than propane.

In its present state, the marketing of butane for this purpose lacks a great deal of the stable footing that characterizes the marketing of propane. . . .

In the majority of butane installations the fuel is withdrawn from the tank as a vapor from the liquid. For a system of this kind to provide a fuel of uniform calorific value, it is necessary that the liquid be of fairly high purity. . . .

One of the factors accounting for the increase in sales of butanes as a domestic fuel has been the widespread use of tank trucks for distribution direct from the point of manufacture, or from bulk plants located at strategic points by distributors. The lower vapor pressure of butanes and the lighter tanks required for its safe transportation permits haul by truck over a distance of a hundred miles very economically. . . .

Contrary to the organization of the propane-fuel industry, the use of butane as domestic fuel has not received the attention from the larger companies that characterized the use of propane for this purpose. As a result, there are many individuals or small firms attempting to market butanes with a noticeable lack of knowledge of the fuel or its proper utilization. . . .

From present indications there is more than sufficient butane to supply any demands of this industry in the future, and price will be dependent largely upon the value of butanes used for other purposes, and the effect of increased demand on the facilities of the manufacturer.

Central Gas Plants

The use of liquefied petroleum gas as fuel for towns of 1,000 to 10,000 population has proven a quite satisfactory outlet where such towns are isolated from gas mains. Some utilities have found the central plant using propane or butane useful in extending their service to territory adjacent to their gas systems with the view of future extension of their mains to towns in this territory. Details of this use of liquefied gas have been very well worked out in the literature[8 9 10 11] and a considerable market for the gases for the purpose exists in many parts of this country. These central plants are of two general types; those distributing undiluted propane and/or butane vapor, and those in which the vapor is mixed with air to form a gas of lower calorific value. . . .

The air-mix plant using propane or butane requires a somewhat greater investment for plant and distribution system and also has a higher operating cost. This type of plant has certain advantages, however. The gas delivered to the mains is usually of about 530 B.t.u., suitable for replacing old water-gas or similar types of gas-manufacturing plants. . . .

One of the possible applications of the small-town central plants in addition to supplying fuel for domestic, commercial and possibly small industrial use, is the generation of electricity, operation of water and sewage pumps, and also refrigeration plant. Such a combination plant, whether privately or municipally owned, offers an extraordinary opportunity for profit to all concerned. . . .

Fuel for Internal-Combustion Engines

The use of butanes and/or propane as a fuel for internal combustion engines has been developed to a considerable extent in the Pacific Coast area. This use started with farm machinery, such as tractors, pumps and trucks, and its use has now spread to commercial vehicles, such as trucks and buses operating over definite routes where suitable provision would be made for fuel supply. . . .

The use of butane as a fuel for oil-well drilling has been a late development in California and with more widespread use in the Mid-Continent. The high-speed diesel engine provides considerable competition in this outlet, but an increasing number of operating companies and drilling contractors are finding the use of butane to offer many advantages. A suitable supply is also a problem on wildcat wells. The butane-engine-powered drilling equipment is light and easily transported, requires but a small amount of water for its operation, and is quickly convertible for use with natural gas.

Propane and butanes are also used as fuel for large stationary engines for pumping, generation of electric power, refrigeration and numerous other uses. Due to the high octane number of these gases, high efficiency is possible in an engine designed for the use of these fuels. A high compression ratio is desirable (around 7 to 1 for butane and 10 to 1 for propane). In this use it is possible that propane will eventually take the place of butanes, as the higher compression ratio will permit greater power to be developed by an engine of a given size.

Test results published[4 5 6 7] on heavy-duty automotive equipment show an increase in horsepower of more than 56 per cent with a 9.95 compression ratio using propane fuel, or 19.3 per cent with a 6.75 compression ratio using butane as a fuel compared with 61-octane-number gasoline at a 4.38 to 1 compression ratio. Fuel savings on a weight basis are as high as 30.9 per cent with the gaseous fuels on the compression ratios mentioned. Where no change in compression ratio is made, there is no advantage in the use of propane or butane. . . .

Butanes in Motor Fuel

In motor fuel as we know it today, propane is undesirable on account of its very high vapor pressure. Butanes, on the other hand, having a nominal vapor pressure are included up to about 6 per cent. Beyond this point the vapor pressure of the fuel rises sufficiently to cause great difficulty by vapor lock of the fuel system in existing automobiles. Evaporation losses are also encountered which limit the amount of butane that may be used economically.

In a paper presented by Mr. Alden[3] before the midyear meeting of the American Petroleum Institute at Pittsburgh in the spring of 1934, butane was termed "a wasted asset of the petroleum industry." In this paper the author most ably discussed the relationship of butane to natural gasoline and the refiner, pointing out the value of

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butane as a motor fuel, both direct and included in blends of natural and refinery gasoline for a conventional motor fuel. Changes in the fuel system of automobiles were recommended that would permit more butane to be incorporated in the fuel with a resultant expected saving to the industry of $55,000,000 annually for an increase of 5 per cent in the butane content of the motor fuel, chiefly due to a lowering of crude-oil requirements and a saving of tetraethyl lead at the refinery. . . .

Liquefied Gases and the Refiner

The position of the refiner has had a considerable effect upon the sales of liquefied petroleum gas by the natural-gasoline manufacturer. Recovery of propane and propene together with butanes and butenes from the gases evolved from the cracking of oil, and recovery of vapors from various parts of the system, is common practice of most refiners.

Where such gases are available in quantity near the centers of large consumption, the refiner has offered no little competition with the natural-gasoline plant located at some distance from the point of distribution. The increased use of polymerization might relieve this situation to some extent as far as the natural-gasoline industry is concerned.

Polymerization and Related Processes

The commercial development of polymerization, alkylation, and related processes has opened a new market for liquefied petroleum gases. . . .

Authorities seem to agree that polymerization or alkylation, in their present stage of development, can be considered only in connection with refinery operations, with the possible exception of a very few locations where large volumes of feed stock can be concentrated by the natural-gasoline manufacturer. There are a number of reasons for this:

1. The polymerization process requires unsaturates such as propene and butene as feed instead of the saturated hydrocarbons produced by a natural-gasoline plant.

2. Saturated hydrocarbons must be cracked to form the necessary unsaturates required for polymerization, or as one of the reacting components in the alkylation process.

3. Cracking of these gases requires additional investment and operating expense. The gases liberated in cracking of oil are rich in unsaturates and are usually available in sufficient quantity in a large refinery.

4. Gasoline plants of any one company are usually scattered in location, making it economically impossible to concentrate lighter fractions at one point in sufficient quantities to use as feed for the conversion process.

5. The refinery has the advantage of having suitable blending stock for production of motor fuel from the polymer gasoline or alkylation product. We may then forget the use of polymerization or alkylation by the natural-gasoline industry at the present time and look to the possibility of profit in the sale of butanes or propane to the refiner who may be operating such a plant.

The use of natural-gas butane is of value to the refiner operating a polymerization plant in one or two ways.

If the light fractions derived from his operations are insufficient to provide feed for an economical-sized polymerization plant, the refiner may wish to purchase sufficient butane to make up this difference. Or, if use of butenes from his light gases for polymerization required the diverting of such quantities of this hydrocarbon as would normally be included in his motor fuel, he would need a sufficient amount of butanes or natural gasoline to make up this deficit. . . . From published data the propene may be assumed to have the value[12] of fuel gas ranging from 0.06 cent per gallon to 0.7 cent per gallon in different locations. In the average refinery the value would probably be nearer the higher value.

Butenes may have a higher value than propene, depending upon whether the product is being burned as fuel, or whether it is being included in motor fuel made in the refinery.

In the first case the value as fuel would be but slightly higher than that of propene, or from 0.09 cent per gallon to 0.8 cent.

If, however, any part of the butenes normally included in motor fuel is diverted to polymerization, such quantities must at least be accorded the value of the polymer gasoline due to the high octane number of the hydrocarbon.

If the refiner uses his entire available butenes for polymerization and has insufficient butane for inclusion in his motor fuel for volatility and antiknock, he must purchase natural gasoline or butane to make up the deficit.

If we assume that feed for the polymerization plant diverted half of the refinery's supply of butane-butene from motor fuel over a year's time we might assume the value of the poly feed to be 50 per cent of the high fuel figure of 0.7 cent per gallon and 50 per cent of the value of polymer gasoline which we will say is 6 cents per gallon. The resultant cost of the poly feed is therefore 3.35 cent per gallon.

The refiner can therefore theoretically pay as high as 3.35 cents for butanes delivered into his tanks. If we deduct from this figure freight charges of perhaps 1.5 cents per gallon and handling costs at the refinery the natural-gasoline manufacturer would receive around 1.5 cents per gallon for his butane.

It is possible, however, that the refiner may choose to use natural gasoline instead of butane to supply his needed volatility. With around 30 per cent butanes in 26-70 natural gasoline it is possible to satisfy his requirements in this way.

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Shell Oil Employes Rewarded For Safe Driving

In recognition of their "no accident" driving records, 177 employes of the Shell Oil Co., Inc., in the Mid-Continent production area, are being awarded safe-driving emblems this month, according to R. B. Roark, vice president. Seven drivers are being awarded gold pins inset with five diamonds, for driving 10 years without a "chargeable accident" (an accident for which they are to blame). Fifty-two men are receiving 6 and 7-year awards, and nineteen men 5-year awards.

In all, Shell drivers in the Mid-Continent area drove more than 5,000,000 miles last year and were involved in only 21 accidents, a ratio of 1 accident per 225,000 miles. To date, 68 Shell Mid-Continent employes have received the diamond-studded pin for 10 years of safe driving.

Building Oil Pipe Line Across Continental Divide

By WILLIAM G. HELTZEL

This is the second installment of an article that began in last week's issue. The third and final installment will appear in an early issue.

THE Utah Oil Refining Co. pipe line was laid by four pipe-line contractors under the supervision of Stanolind Pipe Line Co.'s inspectors and supervisors. The 442 miles was divided into seven jobs, numbered successively from east to west. Because of the mountainous country, the first job was only 50 miles in length. The next four jobs varied from 63 to 78 miles. The sixth job, through the Wasatch Mountains, was only 60 miles long. The difficulties anticipated in constructing the line through the Weber River Canyon made it necessary to confine the last and seventh job to 44 miles. On account of the crude oil for filling the line being received at Fort Laramie and Medicine Bow stations, the construction of the line on the east end was expedited, so that the line and the tanks at the stations could be filled as the various jobs were completed progressively from east to west. Just as soon as each section of the line was completed and tested, it was filled immediately. On the west end, where the progress of construction had been hindered by physical obstacles and delays in obtaining rights-of-way, jobs Nos. 6 and 7 were still under construction while the tanks and the line east of these jobs were being filled with oil.

Left: Looking west down Trail Canyon, Phillips ranch, Morgan County, Utah. Angle dozer is preparing right-of-way. Below: Looking west across Weber River at pipe-laying operation, Morgan County, Utah

Before construction work could be started on the line across the Laramie Range, it was necessary to build through this mountainous section a road that could be used satisfactorily not only for moving in materials and equipment for the construction work, but also for the operation and maintenance of the line. Through Trail and Lost Creek Canyons, on the west end of the line, a right-of-way was excavated along the sides of the sloping hills to provide a place for laying the line and at the same time to serve as a road for construction purposes.

Electrically welded butt joints were used entirely. Each 40-ft. section was laid on skids over the ditch and tied into the line by bell-hole welding. Using this method, commonly known as "stovepiping," the pipe is usually bent in single joints or in longer sections to fit the ditch before it is tied into the line.

The best and most modern equipment for this class of work was used on this job. One useful piece of equipment, comparatively new in pipeline construction, was a rooter pulled by a heavy-duty tractor ahead of the ditching operations for rooting boulders out of the right-of-way and for breaking furrows through rock.

A new method for swabbing pipe was also used on this job. On account of the line being constructed by welding the single 40-ft. lengths of pipe into the line by bell-hole welding, it was not possible to use the customary method of swabbing. In the case of roll welding, the long sections (200 to 250 ft. in length) are swabbed ordinarily by pulling a steel disk, attached to the end of a long string of 1¼ or 2-in. pipe, through them before they are welded into the line. On this job, a special swab was forced through the line by compressed air. The swab is constructed primarily of rubber-cupped disks and stellited steel plates mounted on a shaft. Sections of the line varying from ½ to 5 miles in length were swabbed in this manner. On another line constructed at the same time, a single swab was run through a distance of 40 miles of line. The rubber-cupped disks of the swab fit tightly enough against the walls of the pipe to clean the inside walls of the pipe and clear the line of sediment and foreign matter. Air leakage past the rubber disks blows the dust, mill scale and other foreign substances ahead of the swab. Air pressures varying from 10 to 50 lb. are required for this operation. To avoid injuries, the open end of the line should be closed by welding securely to it a short piece of pipe with one end closed, and slots cut in its walls to release the air. The steel plates of the swab are made slightly smaller than the inside diameter of the pipe, but not so small that they will not stop the scraper at any place in the line where the pipe has been flattened excessively in bending. The edges of these steel plates are made hard by stellite to minimize the wear. Running a swab constructed in this manner gives an assurance that after the line is put in operation,

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pipe-line scrapers can be run without becoming lodged in the line, either on account of flattened pipe or foreign obstacles left in the line.

Upon completion, 20 to 40-mile sections of the line were tested under 100-lb. air pressure for 24 to 48 hours. If the pressure remained constant, the line was accepted as leakproof and was put in service.

Eighty-three calendar days were required for completing the 442 miles of main line. The time required for the completion of the successive jobs from the east to the west end is shown in the table below.

Job No.	Approx. mi. 6-in.	Approx. mi. 8-in.	Total calendar days	Pipe welded into line: Average mi./day	Pipe welded into line: Most miles in one day
1	....	50.16	56	0.89	1.80
2	....	63.14	61	1.03	2.27
3	....	78.51	56	1.40	2.50
4	....	68.16	66	1.03	1.89
5	....	77.44	47	1.65	2.84
6	....	57.50	62	.93	2.12
7	....	23.23	45	.52	.85
7	24.36	....	27	.90	1.67

The maximum amount of line laid in any one day was 2.84 miles. The average progress for completed line for the whole line was 5.33 miles per day.

The good progress on this line resulted from employing good and reliable contractors, having excellent weather conditions, using the most modern and the best equipment, constructing the line under seasoned and experienced supervisors, and by careful planning to meet the limited time left before the inclement weather of winter set in.

Line laid along a section of Weber River that had been dried by the diversion of the water for hydroelectric station, Davis County, Utah

Looking west or downstream from mountain peak in the Wasatch Mountains, Morgan County, Utah. Pipe line is in lower left center of picture. Pipe line crossed Weber River twice in this picture

Protective Coatings

In the stretch of 95.69 miles between Fort Laramie and Medicine Bow stations, 81.6 miles of line were not coated because most of the soil was noncorrosive. Through the Laramie Range the ground was rocky and in the remaining distance of this section the soil consisted either of sand or gravel and boulders. Practically all of the line west of Medicine Bow was coated. A composite coating of primer, asphalt and a bonded spiral-wrapped asbestos felt paper was used for coating 303.75 miles. A superficial examination of the soil along the remaining part of the route indicated that certain sections were not corrosive and it might be advisable to leave the pipe bare for certain distances; however, a closer study of the subsoil revealed that it was rather corrosive and therefore it would be desirable to coat the line continuously.

The composite coating of asphalt and asbestos felt paper was used on the entire 27.2 miles of 4-in. lateral line from Opal to Granger. In the case of the 6-in. lateral line between Rock River and Medicine Bow station, 8.4 miles was left bare and 6.4 miles was coated with asphalt and asbestos felt paper. The field application of the composite coating, made with the combination coating and wrapping machine, kept pace with the laying of the line.

On account of the Great Salt Lake, the water level along the route through Salt Lake Valley is only a few inches below the surface of the ground. This condition, combined with the corrosive nature of the soil, made it necessary to use a heavier type than the composite coating in this section. Consequently the 24.2 miles of 6-in. through the Salt Lake Valley was protected with a Somastic coating, which is composed of asphalt, sand, limestone dust, and asbestos fiber. The application of this coating was made on 40-ft. lengths of pipe at a centralized yard. A field application of the coating was made on the line where the welded joints were made. Through Weber Canyon, 23.2 miles of 8-in. was protected with this same type of coating. On the 6-in., the Somastic coating was $\frac{1}{16}$ in. thick, and $\frac{1}{8}$ in. on the 8-in. No serious damage to the coating was experienced in hauling, stringing or laying the Somastic-coated pipe. It may be of interest to explain also that, except when very cold, the pipe protected with Somastic coating could be bent in the field without damaging the coating.

Except in soils where it is positively known that the pipe will not be affected by corrosion over a period of years, it is the author's opinion that the application of coatings can be justified, especially when the weight of the pipe per foot is reduced proportionately to offset the expense of the coating. No advantage is realized in leaving short stretches uncoated.

Fabricated Piping Systems

Usually piping systems for station lines, manifold, and intermediate junctions are fabricated on the job; however, this method of doing the work has always been slow, tedious and not entirely satisfactory. Conditions and circumstances in the case of this line made it necessary to follow a procedure which was a rather important departure from the conventional practice. After a careful study of the situation, it was decided to fabricate the piping in the Tulsa shop, instead of on the respective jobs, because the time for completion was too short, the locations were too isolated and too far away from sources of supplies, welders were too scarce, the work could not be properly supervised or carried out efficiently, and the cost would be inordinately high. These reasons are detailed because they apply generally to the fabrication of piping systems in the field. Since the plan of fabricating piping at a central location, as developed for this job, has proved so efficient and satisfactory, further discussion of this subject is warranted.

The method calls for definite plans, meticulous care in designing, checking all dimensions carefully and providing all the necessary materials before the fabrication is started. Skilled workmen under capable foremen are also required. H-columns are used as a means of making quick alignments for welding. One of the most essential features of this method is the use of a small sketch sheet (8½ by 11 in.) for showing one or more members of the manifold piping system. After the general plan of a manifold piping system is completed and checked for dimensions, sheets are prepared to show a sketch of the individual member or members, all of the dimensions, every item of material required for its fabrication, as well as a code number used to identify each part in the general drawing. After fabrication, the same code number is stenciled on the part so that it can be

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assembled on the job according to the plan. The use of these individual sketch sheets simplified and facilitated the work because the general plan and the dimensions were broken down into their simple component parts. This procedure made it easy for the foreman and the welders to proceed with their work without delay.

In brief, this method makes it possible to fabricate piping on an efficient production basis. A crew of one foreman, nine welders, four helpers and a material man completed all the fabricated piping for this line in a period of about 34 working days. As soon as the piping for certain locations was completed, it was checked carefully for accuracy and then shipped in carload lots to the place where it was to be used. After arriving at location, usually 1 day was required for assembling a complete manifold piping system. Within 3 days the tie-in connections and other detail work was completed, and the piping system was ready for operation.

This experience in fabricating piping in a shop or at a central location has proved that in comparison with doing the work on the job, the procedure is much quicker, more efficient, less expensive, more accurate and workmanlike, and results in less wastage of materials.

Seamless pipe and forged-steel fittings were used in all fabricated piping. Only high-hub flanges were used in this construction. Extra-heavy seamless pipe was used for the high-pressure piping and standard-weight seamless was used for the moderate or low-pressure system. Flanged joints were used rather freely in the manifold assembly to provide the necessary flexibility for changes in the future. Ring-joint gaskets were used in all high-pressure flanged joints, including the flanges on gate valves and pump connections. Alloyed studs (S.A.E. 4140 with a tensile strength of 100,000 lb.) were used in all high-pressure flanges. Oil-quenched nuts were specified in connection with the studs. Cast-alloy-steel valves were used exclusively, except in the suction piping systems at the stations. On the discharge piping, Series 60 valves were used.

Other specifications for the high-pressure valves included double disks, stellited seats and disks, outside stem and yoke with a shield to protect the rising stem from dust and freezing. For the highest pressures, special-alloy cast-steel Series 60 valves with Series 90 end flanges were used. Such valves were provided with gear-operated mechanism. All valves located along the line were provided with locking features. Valves used in the high-pressure piping systems were tested to pressures as high as 4,000 lb.

The Communication System

The telephone and telegraph system consists of 465 miles of two-conductor copper wires strung on 225 miles of company-owned poles and 240 miles of poles of other companies. Its route is close to the pipe line. The company's own pole line follows along the pipe-line right-of-way, primarily for the purpose of providing quick communication at any intermediate point along the pipe line between pumping stations. Such an arrangement is desirable so that the line walkers and repair crews can keep in touch with headquarters during emergencies along the route, when the line is being patrolled on account of failures or in case of repairs. Without landmarks in the isolated country followed by the pipe line, employes covering the line can easily become lost during the night hours or when the countryside is covered with snow. Under these conditions, the pole line along the pipe-line right-of-way serves as a useful guide for the employes when they are patrolling the line or trying to find their way back to the highways or the nearest place of shelter.

On account of the pipe line crossing through a very sparsely settled country, intermediate telephones are installed near highways and at other convenient points, so that supervisors and employes en route from one point to another can keep in communication with the system. At these locations telephone booths, supplied with a combination heating and cooking stove, as well as fuel, not only protect employes from inclement weather while using the telephone, but also serve as small shelter houses that can accommodate two or three men if they must seek shelter during storms.

Since the dispatching of the oil through this line is directed from Tulsa, a good and reliable communication system is a necessity. Through the use of carrier telephone channels over the telephone system of the Stanolind Pipe Line Co. between Tulsa and Fort Laramie, Wyo., and repeaters on the physical circuit of the Utah Oil Refining Co. at Rawlins, Wyo., excellent communication is maintained between Tulsa and Salt Lake City, as well as intermediate points, not only for dispatching the oil, but for general communication necessary in conducting the business of the company.

SAFETY – Protective Guards Over V-Belt Drives

THERE has been a substantial reduction in the accident-frequency rate in the drilling business over the past 10 years due to the introduction and use of better equipment and methods, more intelligent and better-trained personnel and the almost universal practice of guarding all of the moving parts of the drilling rig.

The latter is of special importance as the guards not only protect the men and prevent many specific injuries but they also encourage the proper mental attitude on the part of the men. The mere sight of the guards reminds them that here is a potentially dangerous business.

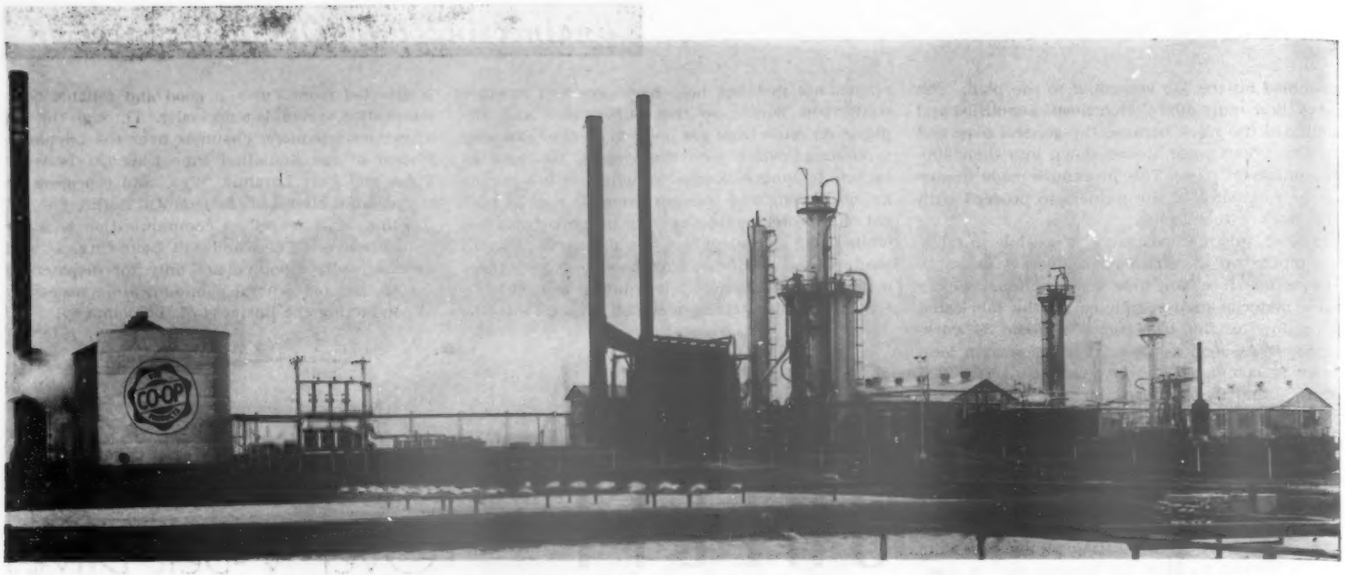
For a variety of reasons the guards covering the rig drives must be manufactured on the job. The welding machine, sheet steel and heavy screen are brought to the well location and the driller and welder take the measurements and make the guards. Openings in the guards for greasing and adjustments are made at this time. Frequently a change in the rig setup will require remodeling or replacement of the guards although generally one set of guards will last throughout the life of the rig. The heavy screen is used to permit free circulation of air around machinery.

The men working around the rig must frequently climb over this machinery and to do so while it is unguarded would be courting a serious accident. The guards are permanent once they are installed in place after the machinery has been rigged up on that particular well. Greasing and minor adjustments do not require removal of the guards although in case of major repairs the guards may be removed but in such cases they are generally replaced before operation of the rig is resumed.

One risk often assumed by drilling crews is that of starting to drill the rathole and surface hole before the guards are in place. This is generally due to the rush to get the drilling started and only the essential parts of the rig are assembled until after the surface pipe has been set and cemented. While waiting for cement to set the crews put in the remaining equipment, including the belt or chain guards. This may leave several days during which the belts are unguarded.

A comparison of safe and unsafe methods of operation was recently given in "Construction Safety," published by the National Safety Council. One firm did a job which cost $260,000 in labor and $6,137 in medical fees and compensation costs. On this job there were 58 lost-time injuries and 1,275 days' lost time. The other firm, on a similar job, did the same amount of work at a pay-roll cost of $170,000 and $1,230 for medical fees and compensation costs. The latter firm had 15 lost-time accidents and 175 days' lost time. The former firm pays $12.50 per $100 of pay roll for insurance while the latter firm pays only $9 per $100.

Transferring the difference in insurance rates to the drilling industry and allowing $120 per day pay roll per rig, it is easily seen that the few hours' time it would take to put the guards in place before starting up would be an excellent investment. In addition, the safer the rig is made the quicker the work necessary to the drilling operation can be performed.



Overall view of the new Kansas refinery

New Kansas Refinery Includes Modern Processing Equipment

(Continued from Page 59)

settling tank is so constructed that complete operation is obtained by settling only, eliminating the necessity of screens and other separating apparatus.

The treated gasoline leaving the catalyst settler is contacted with sodium sulfide solution in the same manner as described for the contact for caustic solution, i.e., jets operated by system pressure. The sodium sulfide solution is used to prevent any copper carryover which might be experienced from overtreatment of the gasoline or by reason of overloading the treating system. Oxygen is introduced into the system under controlled conditions prior to contacting the gasoline to the treating catalyst, the oxygen tending to speed the reaction and to keep the catalyst in a revivified condition. The gasoline leaving the treating unit is transferred from rundown storage to finished storage from where it is mixed into various blends and ethylized as the case may be. The treating plant is also arranged so that the gasoline may be continuously treated under plant pressure direct into finished storage.

Much consideration was given to the type of water-cooling and storage system to be installed since the Phillipsburg area is approximately 2,000 ft. above sea level with a relatively low wet-bulb temperature. The conventional spray-pond system was decided upon rather than either forced-draft or atmospheric cooling towers. Water in Phillipsburg is very difficult to obtain due to the fact that all of the deep water has a high salt content. Two large earthen water-storage ponds were constructed and a water circulating system installed to "double" spray the cooling water and thereby assure maximum results.

Considerable interest has been given the style of architecture employed in the construction of the office building. It is the belief of engineers that buildings in refineries may be beautiful as well as serviceable. The office building is approximately 45 ft. wide by 100 ft. long and is a conventional wood structure erected on a floating concrete slab which also serves as the floor. The exterior of the building is of stucco. Steel sash was used for windows and glass brick was used wherever possible to modernize the building as well as to afford additional light in the working offices. The interior of the building is also modern in design and has celotex ceiling and John-Mansville asbestos-tile flooring.

The laboratory is also housed in this same building along with the general accounting office, superintendent's office, directors' council room, etc. In the rear of the office antiknock machine-testing equipment is housed in a small building of design to harmonize with the office building.

Steel buildings are used throughout the plant to house processing equipment and the boilers. To supply steam for processing and prime movers two 168-hp. water boilers were installed. The boiler plant is complete with Elgin deconcentrators and water-treating equipment—the feed water being heated by the conventional exhaust-steam feed-water heater. A large steam-driven air compressor is also installed in the boiler house, which is used for cleaning still tubes during shut-down periods.

Insulation of towers and processing equipment is of Eagle-Picher rock wool, and all towers are cased in galvanized-iron casing, rather than the conventional insulating coat, and painted. All storage tanks and rundown are equipped with vacuum and pressure-relief valves, flame arrestors and snuffers. Since a large part of the gasoline and other refined products is shipped by truck into Nebraska and immediate Kansas points, a modern truck-loading rack was installed equipped with centrifugal motor-driven pumps with remote-control switches located on the loading rack for convenience of the loader. All products are metered through positive displacement-type meters.

The refinery is owned and operated by the Co-operative Refinery Association and the pipe-line system by the Cooperative Pipe Line Association, both corporations being subsidiaries of the Consumer's Cooperative Association of Kansas City, Mo. The parent association, one of the largest of its kind in the United States in that it contains some 500 cooperative groups, is a large distributor of gasoline, distillate and motor oils so that the plant was built to care for a portion of its market.

The plant was designed and constructed by the Mid-Continent Engineering Co.

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Elimination of Hydrate Troubles

(Continued from Page 64)

gas may be permitted to bypass the dehydrator and thus increase the capacity of the unit. In designing a plant of this type, means should be provided for the removal of lubricating oil or absorption oil from the gas before entering the dehydrator vessel since it appears likely that oil will impair the efficiency of the adsorbent agent.

Raay[8] has described the operation of a silica gel adsorbent plant that has been in successful commercial operation in Venezuela for several years. This plant operates at a pressure of 353 lb. per sq. in. and treats 8,828,000 cu. ft. per day. This plant consists of three contacting vessels or adsorbers and one heater. The operating cycle consists of the adsorbing period, the heating period and the cooling period. Wet gas enters the top of the first contacting vessel and leaves it at the bottom. When the adsorbent material has become saturated, the wet-gas stream is switched to the second contactor. Hot gas (329° F.) from the heater then enters the bottom of the first contactor and leaves it at the top. After all of the water vapor has been removed, a stream of cooled dry gas is passed through the adsorbent bed until normal operating temperatures are obtained. The entire cycle is carried out under full operating pressure.

Other adsorbent agents that are now in commercial operation are activated alumina, anhydrous calcium sulfate (drierite)[7] and florite which is said to be a native bauxite impregnated with manganous chloride.

The comparative efficiencies of some of the above-mentioned solid adsorbent and absorbent materials are shown in the following table which was prepared from the data of Bower:

	Residual water vapor in the treated gas (lb./1,000,000 cu. ft.)
Calcium chloride	78.04
Silica gel	1.87
Potassium hydroxide	0.87
Aluminum trioxide	0.31
Calcium sulfate, anhydrous	0.31

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NICKEL ALLOY STEELS

THE INTERNATIONAL NICKEL COMPANY, INC. 67 WALL STREET NEW YORK, N. Y.

QUESTIONS ON TECHNOLOGY

By W. L. NELSON, TECHNICAL EDITOR

W. L. NELSON

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to W. L. Nelson, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists, and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible. Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, extended computations, or a detailed study cannot be considered. When the matter is of general interest, a reply will be published within a reasonable time.

Aromatic Crude Oils

Will you please inform me as to whether or not there have been any discoveries of oil fields or individual wells in recent years known to yield light-oil distillates of relatively high aromatic hydrocarbon content?—J. W. C.

Crude oils are not usually analyzed for the types of hydrocarbons that are present. However, those crude oils which in the past have been known for their high content of aromatic hydrocarbons, have been asphaltic or naphthenic crude oils. Among these are certain crude oils from Java, Borneo, Rumania, Galacia, and Sumatra; and the United States fields of Coalinga, Ventura, and Puente Hills, California.

Not many of these anphthenic-base crude oils have been discovered in recent years. In fact, the percentage of naphthene-base oils being produced in the United States dropped from 26 per cent in 1928 to only 9.7 per cent in 1936. Among the more prominent recently discovered naphthene-base crude oils, are the following Texas oils: Humble, Pierce Junction, Loma Novia, Refugio, Saxet, Sinton, Amelia, West Beaumont, and Taft. The fact that these oils are of naphthenic base does not prove that they contain commercially profitable amounts of aromatic hydrocarbons but some of the oils should be satisfactory.

Several naphthenic-base crude oils are produced in Louisiana. Among these are: Lake Pelto, Lockport, Port Barre, Welch, Bellevue, Caddo heavy, and Urania-Tullos.

●

Plant Yields and Charcoal Test Yields of Gasoline

We desire to get the relationship between the yield of gasoline by the standard charcoal test and the yields of gasolines of different vapor-pressure that are produced in our plant.—J. C. M.

The conditions used in the charcoal test for the natural-gasoline content of natural gas were selected so that the yield would be about the same as the yield of 26-70-grade gasoline from a commercial plant. However, the test should not be used for gases which contain much more than 1 gal. per 1,000 cu. ft. Richer gases can be handled more successfully by the compression test for gasoline content and of course the best method now available is the low-temperature fractional analysis. The charcoal test gives yields that are somewhat lower than those obtained in most plants. This is due to the fact that all gases do not contain the same properties of butane and propane and because the efficiency of commercial plants varies. The yield is low by only a small amount for lean gases but may be low by even 50 per cent if applied to gases containing 8 gal. per 1,000 cu. ft. The variations are so great for different gases and plants that you are forced to determine "plant factors" for your own particular situation.

Once having established a set of plant factors for your situation, relating the charcoal yields to plant yields of 26-70-grade gasoline (or whatever grade you may be making), the yields of gasolines of other vapor pressures can be readily estimated from conversion factors that are in common use. The factors given below are those suggested by

	Yield as a fraction of the yield of 26-70 grade			
	R. C. Alden			
Vapor pressure	Poor propane elimination	Perfect propane elimination	Average	N.G.A.A
30	...	1.116	..	1.116
26	1.000	1.000	1.000	1.000
22	0.950	0.886	0.917	0.870
18	0.862	0.795	0.844	0.781
14	0.838	0.734	0.778	0.710
10	0.765	0.679	0.720	0.680

R. C. Alden, Page 38 of the Proceedings of the tenth annual convention of the Natural Gasoline Association of America (1931), and also those now in use by the same association in figuring their price quotations for gasoline.

Should you be making a 22-lb. gasoline in your plant, the yield of 26-70 grade would be your plant yield divided by 0.87; or the factor for an 18-lb. gasoline would be 0.781 divided by 0.87.

●

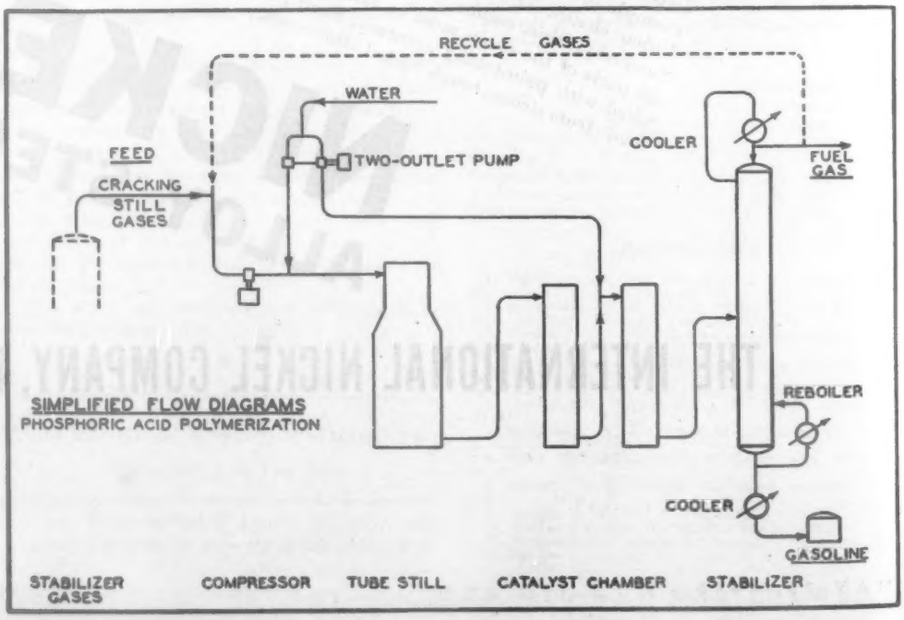
Phosphoric Acid Polymerization

What is phosphoric acid polymerization?—N. A. R.

The catalytic polymerization process of the Universal Oil Products Co., which utilizes a so-called solid phosphoric acid catalyst is shown on this page. The process is applied primarily to cracked gases, preferably from the gasoline stabilizer because of the richness of such gases, but it may also be employed to polymerize olefin gases from any source. About 90 per cent of the olefins are converted which results in a yield of about 16 gal. per 1,000 cu. ft. of pure olefin gases. More than 70 gal. of gasoline have been produced per pound of catalyst without reactivating the catalyst by burning.

The process consists of a heater wherein a temperature of 340° to 400° F. is attained and which will give a catalyst-chamber temperature of 400° to 450° F. The polymerization reaction is exothermic and hence the temperature tends to rise. Higher temperatures result in carbonaceous deposits on the catalyst and at the extreme temperature of 650° F. the acid tends to volatilize. Water tends to vaporize from the catalyst even at regular operating conditions rendering the catalyst inactive, and hence water is usually injected to the amount of about 5 per cent of the feed stock. Too much water may disintegrate the catalyst or promote the formation of propyl alcohol. A pressure of about 500 lb. per sq. in. is maintained—partly to reduce the volume of gases to be handled, partly to increase the rate of reaction and partly to permit the condensation of liquid reflux (propane and butane) in the gasoline stabilizer.

Reference: Shanley, W. R., and Egloff, G., The Oil and Gas Journal, May 18, 1939, p. 116.



SIMPLIFIED FLOW DIAGRAMS
PHOSPHORIC ACID POLYMERIZATION

FIELD OPERATIONS

Summarizing the Week's Developments

TEXAS: Gulf Coast—Production test in a wildcat in Jackson County proved up a new pool in the 5,900-ft. horizon. Jackson County's Mauritz pool was extended. Glenn McCarthy's deepest well in the Chocolate Bayou field in Brazoria County produced distillate and salt water from 11,406-12 ft. and perforations were squeezed off for another test.

Southwest Texas—The Wade City and Orange Grove pools in Jim Wells County may be joined by H. H. Howell's No. 1 Schrade which has flowed pipe-line oil after a drill-stem test.

West Texas—Closely following the completion of the Soma Oil & Gas Syndicate's shallow Yates sand field discovery in western Crockett County is Moore Exploration Co. and Olson Drilling Co.'s No. 1 Noelke, about 6 miles southwest of the Soma area, which has opened another shallow pool.

North Texas—With deep exploratory tests being abandoned almost weekly in Montague and Clay counties, no letup in the active campaign is noticeable. Three locations in wildcat territory were made in the past week in Montague County and one in Clay County.

Eastern Texas—Three wildcat locations were staked in eastern Texas, one each in Anderson, Angelina and Van Zandt counties. All will be Woodbine sand tests.

LA-ARK-TEX—The Olla pool in La Salle Parish was extended three ways by four wells in the Tertiary Wilcox sand. A wildcat in the Mermentau area in Jefferson Davis Parish, South Louisiana, is showing favorably on electrical survey in the 10,000-ft. horizon.

NEW MEXICO—The consummation of a $60,000 deal whereby Argo Oil Corp. acquired two producing wells and a 160-acre tract in the Halfway field of western Lea County headed the week's activities.

ILLINOIS—Over 100 new operations were announced last week. A feverish drilling campaign in the Salem field to bolster Devonian lime production is under way. Production in Salem and in the state fell off.

OKLAHOMA—The Dill pool in western Okfuskee County was extended into Seminole County. A pool opener in Section 4-11-6, northern Pottawatomie County, was completed. A 20-acre spacing order is sought for the new Perkins pool, Lincoln County. Wildcats were started in Cotton, Comanche, Pontotoc and Okfuskee counties.

KANSAS—The Hall pool in Russell County was given its fifth pay zone when oil was found in Howard lime. The Stratman pool, Ellsworth County, was extended ½ mile northwestward, and the Snider pool, Stafford County, was extended ⅝ mile northwestward.

MICHIGAN—Production is gradually falling in the state as new wells fail to produce enough to offset natural decline.

CALIFORNIA—The Buena Vista Hills area is to be explored for deep production by Honolulu Oil Corp. on a 39,000-acre unit owned by a number of operators.

Completions in All Fields

(Week Ended May 18, 1940)

	Oil	Gas	Dry	Total	1940 total comp. to date	1939 total comp. to date
N. Y., Pa., and W. Va.	70	17	3	90	1,489	1,164
Ohio	10	9	5	24	390	343
Indiana	2	1	10	13	132	73
Kentucky	5	1	0	6	172	230
Illinois	47	0	10	57	1,299	1,255
Michigan	10	0	12	22	492	464
Kansas	35	2	15	52	600	422
Oklahoma	29	2	20	51	692	675
Texas:						
North Central Texas	43	0	20	63	1,230	381
West Texas	35	1	2	38	862	706
Texas Panhandle	17	1	0	18	229	146
East Texas	3	0	0	3	110	204
East Central Texas	2	4	7	13	192	94
East Texas Border	0	0	1	1	23	27
Gulf Coast Texas	18	0	7	25	503	527
Southwest Texas	25	1	18	44	892	919
Total Texas	143	7	55	205	3,951	3,504
North Louisiana	10	3	2	15	227	205
Gulf Coast Louisiana	12	0	4	16	346	219
Total Louisiana	22	3	6	31	573	424
Arkansas	2	0	0	2	84	89
Montana	5	1	0	6	60	49
Wyoming	0	0	2	2	57	38
Colorado	0	0	0	0	7	3
New Mexico	3	0	5	8	271	229
California	22	0	3	25	431	364
Total United States	405	43	146	594	10,700	9,326
Total previous week	408	29	132	569		
Week ended May 20, 1939	380	46	138	564		

Outstanding Fields—Highlights

(Week Ended May 18, 1940)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
K.M.A.	33	59	16	10,842	1,355	40,497
Wasson-Bennett	15	54	13	13,763	811	30,267
Ector County	20	68	9	8,776	2,113	58,166
Pecos County	8	13	2	2,737	1,266	32,400
Jones County	9	16	3	193	616	8,600
East Texas	10	11	3	119	25,988	396,491
OKLAHOMA						
St. Louis	2	15	1	105	882	29,000
Cement	2	17	2	401	307	6,350
KANSAS						
Bemis	0	7	2	700	315	6,700
Burnett	3	11	3	767	88	5,495
Silica	2	12	3	1,330	625	12,550
Trapp	2	13	4	955	527	955
NEW MEXICO						
Lea County	16	39	1	200	2,460	87,300
Eddy County	15	59	2	1,278	563	18,680
LA-ARK-TEX						
Cotton Valley, La. (deep)	0	3	0	0	159	15,530
Olla, La.	2	9	4	964	7	1,280
Golden Meadow, La.	2	11	4	740	88	16,175
MICHIGAN						
Kent County	5	20	3	780	307	15,526
CALIFORNIA						
Montebello	1	10	1	630	359	22,125
ILLINOIS						
Salem	15	109	15	12,862	1,942	248,210
Louden	5	34	9	2,067	1,443	76,814
Other basin fields	24	291	23	12,059	2,705	99,979
Old fields	....	.....	....	.....	.....	11,063
MISSISSIPPI						
Tinsley	1	8	2	2,568	51	8,280

Illinois, Indiana and Kentucky

By STAFF CORRESPONDENT

Salem Production Declines; Devonian Drilling Increases

CENTRALIA, Ill., May 20.—Salem's production fell off to 248,210 bbl. per day last week, a drop of 9,212 bbl. per day from the week before and production for the state dropped 1,973 bbl. per day to 436,066 bbl. per day. Louden showed a substantial increase of 3,166 bbl. per day registering an average of 76,814 bbl. per day for the past week. Centralia increased slightly to 26,288 bbl. per day. A big increase in drilling operations in Salem indicates that operators there are doing their utmost to keep Devonian production from dropping seriously. The number of Devonian lime completions in the field last week was relatively small, but there were a large number of wells in the pay and being made ready for completion which should show in next week's list of wells completed.

There is not the slightest sign of a let-down in field work in Illinois. One hundred and one new operations were announced during the past week, 15 of which will be started in the Louden field in Fayette County and 4 in other parts of that county; 37 in the Salem field in Marion County and 4 outside of the Salem area; 8 in the Clinton County side of the Centralia field and 1 on the Marion County side; and 8 other starts in various parts of Clinton County. Coles, Shelby, Effingham, Jasper, Richland, Clay, Wabash and Hamilton counties will have 1 each; Wayne, 6; Washington, 4; Edwards, 2; and White, 4. These new operations include drilling wells, rigs up and locations made. Few if any weeks have shown more first reports of field work to be done than the week here in review.

Only 57 completions were recorded in the state in the past week, 47 oil wells, and 10 dry holes in wildcat areas. Initial production was 26,988 bbl. Ten Devonian lime wells with a total initial production of 10,437 bbl. were completed in the Salem field in Marion County. Five wells in pays above the Devonian and with a total initial production of 2,425 bbl. were completed in Salem. In the Centralia field 11 Devonian lime wells were completed with a total initial production of 6,976 bbl. Nine wells were completed in the Louden field in Fayette County, the initial production was 2,067 bbl.

In Hamilton County Kingwood Oil Co.'s No. 2 Dodd, NE SE NW Section 6-6s-7e, not yet a completion, swabbed 423 bbl. in 24 hours before it was shot with 40 qt. at 2,696-2,716 ft., Cypress sand. The crew was cleaning out after the shot. Kingwood's No. 3 Wilson, SE NW SE Section 6, was also in Cypress sand at 2,680-82 ft., total depth, but had not tested. Seven-inch pipe was set at 2,670 ft. Ohio Oil Co.'s No. 1 Wilson in SW SW NE Section 6 had Cypress sand at 2,700-11 ft., total depth 2,717½ ft. and was swabbing.

In Clay County W. C. McBride, Inc.'s No. 1 Landreth, NW NW NE Section 27-5n-5e, perforated pipe at 2,445-49 ft. with 50 shots and acidized with 2,500 gal. The packer failed and the well was given another 1,500-gal. treatment and swabbed 1 bbl. of oil and 4 bbl. of water per hour. The hole was deepened to 2,473 ft. and found a small showing of oil at 2,469-73 ft. and the crew was testing this formation.

In White County Sun Oil Co.'s No. 1 Carl Brown, C S½ SE NW Section 2-4s-9e, had McClosky lime at 3,371-75 ft. In a drill-stem test, open 15 minutes, gas showed in 6 minutes and the well started flowing at the end of 12 minutes. Seven-inch casing was set at 3,371 ft. Bottom-hole pressure was 1,450 lb.

In the Centralia field in Clinton County Scott & Carey's No. 1 Starr, Lot 11, Block 3, Second Home addition, had Devonian pay at 2,900-12 ft. It was acidized with 750 gal. and produced 250 bbl. in 24 hours. Fairhope Oil Co.'s No. 3 Barth, in Section 12-1n-1w, pay at 2,916-26½ ft., acidized with 1,500 gal., flowed 336 bbl. Max Pray's No. 1 Johnson, NE cor. NW NE NW Section 13-1n-1w, flowed 462 bbl. of oil and 300 bbl. of water from pay at 2,935-39 ft. The above wells were reported after the general completion report was filed. B. Fields' No. 1 Allison, NW cor. NE NE Section 12-1n-1w, flowed 660 bbl. in 14 hours but was not yet a completion and the pay depth was not yet ascertainable.

Centralia Field

T. W. Lee's No. 1 Hansemann, 204 ft. from south and 847 ft. from west lines of SW Section 1-1n-1w, on the Clinton County side of the Centralia field, had Devonian lime pay at 2,913 ft., total depth 2,916 ft. It flowed 727 bbl. in 24 hours after a 1,000-gal. acid treatment and was to be shot again with 2,000 gal.

Ring & McLean's No. 1 Hausemann, SW SE SE Section 1, was in Devonian pay at 2,907-12 ft., and flowing by heads. Samedan Oil Co.'s No. 3 A. Buehler, C E½ NE SW Section 1, was in the pay at 2,889-82 ft., with pipe set at 2,868 ft. Shell Oil Co., Inc.'s No. 6-C Hausmann, C W½ SW SE Section 1, topped Devonian lime at 2,865½ ft., and was at a total depth of 2,923 ft., with chert and dolomite in the bottom.

Smokey Oil Co.'s No. 3 Allison. E½ NE SW Section 12, was completed in Devonian pay at 2,911-21 ft., and flowed 1,000 bbl. following a 3,000-gal. acid treatment. Centralia-Great Lakes Oil Co.'s No. 1 Harmon, Lot 9, Block 2, Home Terrace, Section 12-1n-1w, had pay at 2,910-14 ft., acidized with 1,500 gal., it flowed 720 bbl. per day. Gulf Oil Corp.'s No. 1 Adams-Buehler, SW NE SW Section 12-1n-1w, flowed 1,452 bbl. a day from pay at 2,906-16½ ft., which had been acidized with 1,000 and 2,000 gal. Gulf's No. 15 S. Buehler, SE cor. NE SW Section 12, had pay at 2,905-18 ft.; acidized with 2,000 gal., it flowed 137 bbl. in 23 hours; a 2,000-gal. treatment increased the flow to 700 bbl. in 24 hours but with about 55 bbl. of water. Gulf's No. 16 S. Buehler, E½ NE SW Section 12, pay at 2,909-22 ft.; acidized with 1,000 and 2,000 gal., it flowed 1,083 bbl. per day but declined to 998 bbl. Shmulem and others' No. 1, unnamed lease, NE NE SE Section 12, pay at 2,909-21 ft. and 2,926-34 ft., 1,500 gal. of acid, pumped 250 bbl. A. W. Gerson's No. 1 fee, Lot 3, Block 3, Finney Heights, Section 24, pay at 2,930-35 ft., flowed 260 bbl. per day, naturally.

In Township 1n-1e, Centralia townsite, Marion County, the only completion was W. B. James' No. 1 Neimeir, 50 ft. north and east of SW cor. NW Section 18, pay at 2,904-10 ft. and 2,921-27 ft., 2,000 gal. of acid, flowed 360 bbl. of oil and 36 bbl. of water.

Jones & Jones' Trenton lime test, No. 1 Haak, SE cor. NE Section 13-1n-1w, was at a total depth of 3,601 ft. The crew was cleaning out to 3,000 ft. Max Pray's No. 1 Johnson, NE cor. NW NE NW Section 13-1n-1w, had Devonian pay at 2,932 ft., flowed 462 bbl. of oil and 250 bbl. of water in 24 hours, but on the following day flowed 345 bbl. of oil and 300 bbl. of water, and on the third day flowed 298 bbl. of oil and 300 bbl. of water in 22 hours after which it was reported declining steadily.

Marion County

In the Patoka field in Marion County, Adams Oil & Gas Co.'s No. 4 Sam Pugh, NW SE NE Section 29-4n-1e, was shot with 40 qt. in Benoist sand at 1,422-47 ft., and pumped 27½ bbl. per day.

Max Pray's No. 1 Thurman, SW SE SW Section 15-3n-2e, was dry and abandoned at 2,315 ft., Ste. Genevieve lime top was at 2,255 ft.

In the Salem pool Texas Co.'s No. 5 T. Fisher, NW NE NE Section 4-2n-2e, 2 miles north and about ½ mile east of Devonian production, had Devonian lime at 3,565 ft. and drilled to 3,647 ft. with no commercial results. The hole was plugged back to 2,070 ft. and pumped 126 bbl. of oil in 20 hours; Aux Vases sand was topped at 2,005 ft. Magnolia Petroleum Co.'s No. 105 J. H. Young, NE SW SW Section 21-2n-2e, Devonian top at 3,392 ft., total depth 3,522 ft., acidized with 4,000 gal., flowed 220 bbl. per day. Texas Co.'s No. 25 D. Young, SE SW NW Section 21-2n-2e, pay at 3,454-89 ft., acidized with 3,000 gal., flowed 837 bbl. per day. Magnolia's No. 33 W. Chitwood, NW cor. NE NE SW Section 28-2n-2e, deepened from 2,070 ft. to Devonian at 3,449-72 ft., acidized with 4,000 gal., flowed 1,107 bbl. Magnolia's No. 103 J. H. Young, SE SW NW Section 28-2n-2e, Devonian top at 3,361 ft., total depth 3,502 ft., acidized with 4,000 gal., flowed 738 bbl. Texas' No. 13 F. Lee, SW SE SW Section 28-2n-2e, pay at 3,418-56 ft., 3,000 gal. of acid, flowed 877 bbl. Texas' No. 23 Friesner, NW SE NW Section 32-2n-2e, pay at 3,326-80 ft., acidized with 3,000 gal., flowed 596 bbl. Texas' No. 10 Hopkins, NE NW SW Section 32-2n-2e, pay at 3,303-47 ft., 3,000 gal. of acid, flowed 1,824 bbl. Texas' No. 16 W. Richardson, SW NE SW Section 32-2n-2e, pay at 3,356-93 ft., 3,000 gal. of acid, flowed 1,663 bbl. Texas' No. 18 Richardson, NE SW NW Section 32-2n-2e, pay at 3,310-42 ft., 5,000 gal. of acid, flowed 915 bbl. Texas' No. 10 Easley, NW SE NW Section 33-2n-2e, pay at 3,478-3,512 ft., 5,000 gal. of acid, flowed 1,654 bbl.

Texas Co.'s No. 50, city of Centralia land, SE SW NW Section 4-1n-2e, Salem field, shot with 60 qt. in Benoist and Aux Vases sands at 1,814-75 ft., flowed 615 bbl. per day. Texas' No. 14 G. Johnson, C N½ SE NE Section 7-1n-2e, McClosky lime at 1,946-58 ft. and 1,995-2,000 ft., total depth 2,040 ft., acidized with 3,000 gal., flowed 480 bbl. in 6 hours through casing and tubing. Texas' No. 5 A. Richardson, SE NW NE Section 7-1n-2e, McClosky at 2,950-68 ft. and 2,004-25 ft., 3,000 gal. of acid, flowed 1,050 bbl. Texas' No. 31 L. Hawthorne, NE NW NE Section 8-1n-2e, McClosky at 1,995-2,027 ft., at intervals, acidized with 2,000 gal., pumped 154 bbl. C. L. Lachtrup's No. 1 Fyke cemetery, SW cor. NE SE SW Section 17-1n-2e, Benoist sand at 2,003 ft., Renault at 2,057 ft., total depth 2,144 ft., dry and abandoned.

A Devonian lime failure was reported from Edgar County, Sam J. Burkitt's No. 1 Schoitker, C W½ NW SE Section 30-16n-11w of second principal meridian. It was plugged and abandoned at 1,695 ft. Devonian lime was topped at 1,625 ft.

In Coles County Carter Oil Co. abandoned its deep test, No. 1 James H. Seaman, NW NE SW Section 35-12n-7e. It had been drilled to 4,908 ft., penetrating St. Peter sand. Subsequently it was tested at various levels up the hole and at 2,022-38 ft. it was given a 4,000-gal. acid treatment. It swabbed 3 bbl. of water per hour with a showing of oil.

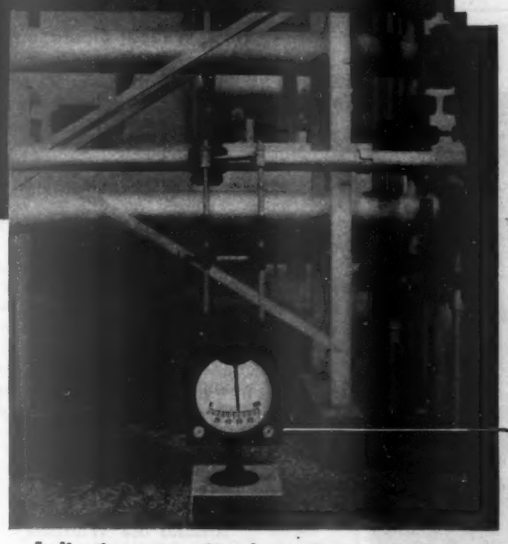
Carter Oil Co. completed two stratigraphic tests in Shelby County in the NW cor. SW Section 28-11n-5e, and NE cor. SW Section 29-11n-3e, but no information was given as to depth or what was logged. Paul Doran's No. 1 Compton, NE NW NE Section 22-10n-4e, Shelby County, was dry and abandoned at 2,011 ft. McClosky lime was found at 1,975-95 ft., and dolomite at 2,000-10 ft.

In Montgomery County O. W. Burroughs' No. 1 Eaglehoff was dry and abandoned at 650 ft.

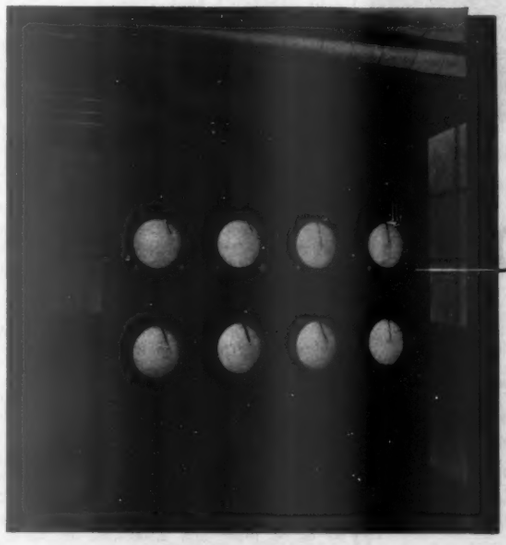
Fayette County

In the Louden field in Fayette County, Carter Oil Co.'s No. 2 Dragoo, NE SE NE Section 23-8n-3e, was shot with 15 qt. at 1,536-40 ft., Cypress sand, and swabbed 48 bbl. per day. Carter's No. 5 Harley Stead, SW SW SW Section 12-8n-3e shot with 20 qt. at 1,452-58 ft., swabbed 312 bbl. Carter's No. 9 E. M. Durbin, SW SW SW Section 27-8n-3e, shot with 60 qt. in Cypress sand at 1,504-36 ft., flowed 984 bbl. Minerva Oil Co.'s No. 15 Fisk, SW NE SE Section 33-8n-3e, Cypress at 1,467-1,519 ft., flowed 95 bbl., naturally. Same company's No. 16 Tish, SW NW SE Section 33-8n-3e, pumped 90 bbl. per day from Cypress sand at 1,471 ft., total depth 1,542 ft. Carter Oil Co.'s No. 4 M. Dial, NW NW NW Section 34-8n-3e, Cypress at 1,503-23 ft., Paint

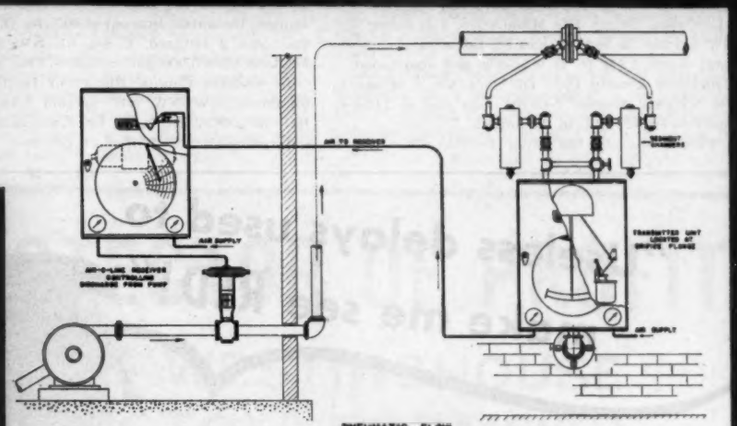
Centralized



Indicating transmitter located at remote point of measurement.



Recording controller mounted on centralized control panel in control room.



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For Metering Flow and Liquid Level

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- ★ instant response
- ★ unimpaired accuracy
- ★ positive positioning of pen. No pen "drag" or "over-shoot"
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- ★ complete inter-changeability of all receiving recorders
- ★ operator an indication at the point of measurement in addition to the recorder in the control room
- ★ reduction in panel board space — neater and cleaner "back-of-board" appearance
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Eliminates:

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- ● fire hazards in control room caused by leaky manifold piping
- ● costly manifold piping in control room
- ● expense of long runs of pressure leads from point of measurement
- ● sluggish meter operation resulting from long runs of pressure leads
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Creek at 1,562-70 ft., shot with 10 qt. in each formation, pumped 72 bbl.

In Township 7n-3e, Louden field, Papoose Oil Co.'s No. 1 Owen, SE cor. SW SW NW Section 8, Cypress at 1,436 ft., and Paint Creek at 1,415-1,508 ft., 20-qt. shot, pumped 30 bbl. Carter's No. 2 Owen, SW NE NW Section 17-7n-3e, shot with 60 qt. at 1,481-1,500 ft., pumped 396 bbl., Cypress sand was at 1,466-1,507 ft.; Paint Creek stray at 1,565-84 ft., and Bethel sand at 1,594-1,600 ft. L. B. Hoss' No. 8 Sealock, SW NE NW Section 19-7n-3e, shot with 40 qt. at 1,556-63 ft., Cypress sand, pumped 40 bbl.

In Section 1-5n-2e Texas Co.'s No. 1 Grey, NW SE NE Section 1-5n-2e, was dry and abandoned at 1,620 ft. Cypress sand was topped at 1,610 ft.

In Lawrence County Dee Miller's No. 1 J. Stout, NW NE SW Section 30-5n-13w, had St. Louis lime at 2,800 ft., total depth 2,841 ft. It was dry and abandoned.

In Richland County Pure Oil Co.'s No. 1 Myers A, C W½ NW SW Section 7-4n-10e, had pay at 2,938-45 ft., and flowed 827 bbl. in 24 hours.

In Wabash County Big Chief Drilling Co.'s No. 1 C. B. Peach, SW SW SW Section 34-2n-13w, pumped 688 bbl. in 24 hours from McClosky lime at 2,688-95½ ft., which had been acidized with 3,000 gal.

In Clinton County Paul Mosebach's No. 2 Robbins, SW SW SE Section 5-1n-3w, Bartelso field, pay at 2,416-30 ft., 3,000 gal. of acid, pumped 140 bbl. per day.

In Clay County Pure Oil Co.'s No. 4 Hubble, NE NE NE Section 5-1n-8e, McClosky pay at 2,998-3,008 ft., flowed 607 bbl. a day, naturally. Pure Oil Co.'s No. 1 Abrecht A, C W½ SW NW Section 9-1n-8e, McClosky lime showings and pay at 2,982 to 3,047 ft., at intervals, acidized with 5,000 gal., pumped 229 bbl.

In Wayne County Pure Oil Co.'s No. 3 Stella Billington, C E½ SE NE Section 27-1n-7e, topped St. Peter sand at 7,114 ft., and was abandoned at 7,207 ft. It topped Devonian lime at 4,867 ft. Oil Well Drilling Co.'s No. 2 Hilliard, C S½ SE NW Section 34-1s-7e, acidized with 5,000 gal. at 3,266-71 ft., pumped 158 bbl.

In Wabash County Big Chief Drilling Co.'s No. 1 Summers, NW NW NW Section 3-1n-13w, McClosky lime at 2,682-2,724 ft., at intervals, acidized with 3,000 gal., pumped 1,265 bbl. of oil per day. W. N. Bartlett's No. 4 Stansfield, SW NE NE Section 30-2s-13w, North Griffin field, Cypress sand at 2,461 ft., shot with 30 qt. at 2,470-82 ft., pumped 420 bbl. per day.

In Edwards County Noah & Morrison's No. 1-A Barnes, SE NE NE Section 24-2s-10e, Waltersburg sand top at 2,370-82 ft., pumped 336 bbl. per day without a shot.

In White County Magnolia Petroleum Co.'s No. 1 Pollard, SW SW SE Section 28-3s-9e, casing perforated at 3,394 to 3,418 ft., acidized with 1,000 gal., pumped 60 bbl. of oil and 45 bbl. of water. McClosky lime, topped at 3,442-47 ft., was found barren. Phillips Petroleum Co.'s No. 1 Garr, C W½ NW NW Section 31-4s-11e, was dry and abandoned at 5,349 ft. Devonian was topped at 4,885 ft.; Dutch Creek at 5,093-5,150 ft There was a small showing of oil at 5,113-16 ft. Superior Oil Co.'s No. 2 Greathouse, NE SW NE, McClosky lime at 2,907-12 ft., acidized with 500 gal., pumped 172 bbl. in 16 hours. Pure Oil Co.'s No. 1 H. Martin, C W½ SW NW Section 7-6s-9e, an old well deepened from 3,130 ft. to 3,190 ft., was dry and abandoned. W. C. McBride, Inc., junked No. 1 Green Starr at 2,532 ft. It had been shot with 40 qt. at 2,510½-31 ft.

New Wildcat Operations

In Coles County Carter Oil Co.'s No. 1-A James Seaman, SE NE SW Section 35-12n-7e, set 10-in. at 204 ft. It is a St. Louis lime test on the lease on which Carter drilled its St. Peter sand test, just abandoned.

In Shelby County Werner & Dudley's No. 1 Prosser, 100 ft. from south and 660 ft. from west lines of SW NE Section 25-10n-4e, an old well to be deepened from 1,630 ft.

In Effingham County Clow and others' No. 1 Johnson, NW NE SE Section 17-8n-4e, drilling at 1,350 ft.

In Jasper County Pure Oil Co. had rig up for No. 1 M. Aldridge, C E½ NE NW Section 17-5n-10e.

In Clinton County Benoist and others' No. 1 Huber, NW NW SE Section 36-3n-1w, was shut down for orders at 1,554 ft.

In Marion County R. E. Angie and others' No. 1 Zollar, 493 ft. from north and 453 ft. from west lines of NE SE NE Section 20-3n-2e, coring Fredonia lime at 2,316 ft., with no oil showing.

In Washington County Ohio Oil Co.'s No. 1 Buchner, 330 ft. from north and 1,065 ft. from east lines of NE NW Section 9-2s-2w, location.

Among the Wildcats

In Iroquois County Whitlow's No. 1 Gannon, NE SW SE Section 5-27n-12w, was drilling at 945 ft.

In Tazewell County House's No. 1 Greenning, NW NW SE Section 28-24-2w, drilling at 1,210 ft.

In Ford County Nelson, Erp and Stroh's No. 1 Erp, SW NW SE Section 19-24n-7e, drilling at 200 ft.

In Edgar County Ebb Pearcey's No. 1 Sholem, NW SE SE Section 13-14n-14w, drilling at 205 ft. Dunn's No. 1 Weaver, SW NE NW Section 24-14n-14w, drilling at 120 ft.

In Clark County Hull's No. 1 Briscoe, C W½ W½ SW Section 32-12n-14w, total depth 542 ft., plugged back to 438 ft. and acidized with 2,000 gal. in pay at 400-35 ft., Westfield lime; will put on pump. Allen & Sherritt's No. 1 Biggs, NW NW SW Section 9-11n-14w, total depth 2,450 ft., pumped 10 bbl. of fluid per hour, mostly water; testing. Harr and Hawley's No. 1 Pinnell, SE NW SE Section 6-11n-14w, drilling at 1,555 ft. Snaveley's No. 1 Freeman, NE cor. SE NW Section 4-8n-11w, Ste. Genevieve lime at 1,354 ft., drilling at 2,240 ft.

In Fulton County Lee Township Oil Co.'s No. 1 Frederick, NE cor. SE NW Section 10-7n-1e of the fourth meridian, drilling at 185 ft.

In Clay County Benedum & Trees, Inc.'s No. 1 Hagan, NW SE NE Section 28-4n-7e, was drilling ahead at 3,022 ft. Fredonia lime was topped at 2,992 ft. A drill-stem test at 2,900-25 ft., open 30 minutes, recovered 60 ft. of mud; and 2,990-3,005 ft. sandy shale and oolitic lime were recovered, and at 3,005-22 ft. a hard dense limestone. A. R. Madden was rigging up rotary for No. 1 Sloan, NE SE SW Section 6-4n-5e.

In Madison County J. R. Wilson's No. 1 Danderman, SW cor. Section 1-5n-6w, drilling at 1,815 ft. Jennings and others' No. 1 Mossiman, SE SW NW Section 22-4n-5w, topped Maquoketa lime at 2,540 ft. and drilled to 2,805 ft.; shut down.

In Bond County Jack Powell had rotary rigged up for No. 1 Hunter, SW SE SE Section 1-4n-4w, corrected location.

In Randolph County Fisher's No. 1 Utchman, SW cor. NE NW Section 7-6s-5w, recovered the "fish" and was drilling at 1,900 ft. Ralston & Beattie's No. 1 Fos-

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ter, C NE SE Section 31-4s-5w, was shut down for orders at 934 ft.

In Gallatin County Carter Oil Co.'s No. 1 Vineyard, SW SE NE Section 21-7s-8e, was drilling at 3,015 ft.

In Cumberland County Carter Brothers' No. 1 Howe, SE cor. NW NW NE Section 24-10n-10e, drilling at 162 ft.

In Montgomery County Brown's No. 1 Lipe, SW SW SE Section 28-10n-3w, drilling at 1,410 ft. It had a rainbow showing of oil at 1,348 ft.

In Knox County Lomex' No. 1 Nelson, SE SW NE Section 20-10n-1e of fourth principal meridian, reaming hole at 195 ft.

In Jasper County Pure Oil Co.'s No. 1 Redman, C E½ NW NW Section 16-5n-10e, was drilling at 3,792 ft. It topped Osage lime at 3,572 ft. R. Aten's No. 1 Mendenhall, SW SW SE Section 17-8n-10e, drilling at 1,520 ft.

(Continued on Page 102)

INDIANA

EVANSVILLE, Ind., May 20.—A big dent was put in the wildcat activities of Indiana with the reports of dry and abandoned holes in Sullivan, Knox, Porter, Lagrange, Madison, Vigo, Owen, Dubois, and Warrick counties. Two oil wells, one gas well, and ten dry holes were reported during the week.

In Gibson County Cherry & Kidd and others' No. 1 Dunn, SE SW NE Section 17-3s-13w, a wildcat, was dry and abandoned at 2,828 ft. Fredonia lime was topped at 2,745 ft. Joe Bender and others' No. 32 Cooper, SE NW NE Section 24-3s-14w, was shot with 10 qt. in Cypress sand at 2,525-29 ft., and made a 125-bbl. pumper. Bander and others' No. 33 Cooper, NE SW NE Section 24-3s-14w, which was drilled to 3,000 ft., was plugged back to 2,106 ft. and Waltersburg sand at 2,093-2,106 ft. was to be tested.

In Sullivan County Forest Oil Corp.'s No. 1 Riggs, NW NE SW Section 33-9n-9w, was dry and abandoned at 2,390 ft. Devonian lime was topped at 2,285 ft. There was a small showing of oil at 2,290-2,303 ft., but water broke in at 2,385-90 ft. Joe Young and others abandoned No. 1 Shepard, C N½ SE NE Section 13-6n-10w, at 1,406 ft.

In Greene County Shicker & Lyon's No. 1 Kiser, NW NW NW Section 4-7n-5w, had Devonian lime top at 1,514 ft.; a hole full of water at 1,615 ft., and was drilling at 1,924 ft. with the hole full of water.

In Knox County M. I. T. Syndicate's No. 1 McHenry, Donation 214-5n-9w, was dry and abandoned at 3,680 ft.

In Porter County D. Goodson's No. 1 Pluta, NW SE SE Section 28-37n-5w, was dry and abandoned at 1,150 ft.

In Lagrange County J. W. Hunt's No. 1 Babcock, SW SW NE Section 13-37-9e, was dry and abandoned at 1,100 ft.

In Jay County Ellen Burke has started a test for Trenton lime production, No. 1 McFarland, SW NE SW Section 24-22n-14e, which was drilling at 1,040 ft.

(Continued on Page 106)

EASTERN KENTUCKY

ASHLAND, Ky., May 20.—Two oil wells and one gas well were completed in eastern Kentucky in the past week and production data are reported on another well.

Kentucky-West Virginia Gas Co.'s No. 585 A. C Webb, on Sanson Fork of Prater Creek, in Floyd County, total depth 2,903 ft., in shale, has a gas production of 972,000 cu. ft. per day with rock pressure of 270 lb.

J. Ray Eastin's No. 8 Marion Shoemaker, at Zoe, in Lee County, started at 5 bbl. of oil daily.

R. T. Barnes' No. 4 Alvin White, on Billies Fork, in the Big Sinking district of Lee County, made an initial daily production of 10 bbl. of oil.

The Inland Gas Co. reports the deepening of No. 206 Charles Goble, in Knott County. It reached a total depth of 2,922 ft. with the well producing 700,000 cu. ft. of gas daily.

In Knott County Inland Gas Corp. is spudding No. 213 W. R. Smith and others, on Right Fork of Troublesome Creek. The same concern made a location for No. 213 Lindsey Amburgy, on Mill Creek of the Left Fork of Troublesome Creek, Kentucky-West Virginia Gas Co. is down 1,920 ft. in Maxon sand in No. 584 Jeffie Hall, on Isaac Fork of Right Beaver.

In Martin County Kentucky-West Virginia Gas Co. had reached 1,180 ft., in sand, in No. 5265 J. G. Carlise, on Cassady Branch of Coldwater Fork; is drilling at 710 ft. in No. 5366 Henry Watson, in the same locality, and down 372 ft., in slate, in No. 5267 Monroe Bolen, on Long Branch of Jones Fork, in Knott County.

In Floyd County Kentucky-West Virginia Gas Co. is down 1,840 ft., in slate, in No. 586 Levi Mitchell, on Mitchell Branch of Mud Creek; had reached 1,785 ft. in Big lime, in No. 587 John Campbell, in the same locality; drilling at 1,003 ft., in Salt sand, in No. 592 John Wicker, and is building rig for No. 593 Mary and J. B. Adams, in the same area.

Kentucky-West Virginia Gas Co. is building road to No. 595 Floyd Hall, and is down 1,461 ft., in Salt sand, in No. 5262 W. R. Hall, on Johns Fork of Left Beaver; and is moving to No. 5268 John F. Burchett, on Cow Creek.

(Continued on Page 115)

OHIO FIELDS

NEWARK, Ohio, May 20.—Twenty completions were reported in the Ohio fields covered by this report, eight gas wells, seven oil wells, and five dry holes. An oil well making 112 bbl. the first 24 hours after the shot was completed in Coshocton County. Completions from the various fields are as follows:

In Ashland County, Jackson Township, Ohio Fuel Gas Co.'s No. 2 L. D. Hall, Section 22, gaged 250,000 cu. ft. of gas, open flow, from Clinton sand at 2,881-86 ft.

In Athens County, Ames Township, Carpenter & Glazier's No. 24 John Smith, Section 13, is an oil well in the first Cow Run sand, with a settled production of 5 bbl., depth is 350 ft. In York Township Ohio Fuel Gas Co.'s No. 179 Sunday Creek Coal Co., Section 32, has an open flow of 250,000 cu. ft. of gas from the Salt sand at 295 ft.

In Coshocton County, Pike Township, Pure Oil Co.'s No. 1 Roger Myers, Section 14, made 112 bbl. of oil the first 24 hours after a shot in Clinton sand at 3,139-85 ft.

In Holmes County, Washington Township, Ohio Fuel Gas Co.'s No. 1 W. G. Kaylor, Section 10, is dry at 3,039 ft.

In Lawrence County, Washington Township, Portage Producers, Inc.'s No. 9 Cambria Clay Products Co., Section 13, is good for 1,100,000 cu. ft. of gas, open flow, from the Clinton, total depth 3,001 ft. In Union Town-

(Continued on Page 121)

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Texas and Louisiana Gulf

By
NEIL WILLIAMS

Wildcat in Jackson County Discovery Well of New Pool

HOUSTON, Tex., May 20.—A new field for the Texas Gulf Coast, east of the town of Lolita, Jackson County, was opened Monday as Wellington Oil Co.'s No. 1 Ranch Co., Section 11, Block 1, L&G.N. Survey, was flowing 8 bbl. of fluid per hour while cleaning out through a ¼-in. choke. Eighty-five per cent of the fluid was 34-gravity oil and the balance wash water. Tubing pressure was 490 lb. and shut-in casing pressure 800 lb. Production is from the Frio formation through perforated casing at 5,933-37 ft. Close-in protection acreage is held by several major and independent companies and an active development program is anticipated.

Last week a broken sand and shale showing oil and gas was cored at 5,913-38 ft., and on a 9-minute drill-stem test at 5,933-38 ft. the well tested 90 lb. working pressure, and blew oil and gas for 7½ minutes after the first joint of pipe was broken down. Fourteen hundred feet of 34-gravity oil was recovered. Five and one-half inch casing was cemented on bottom at 5,938 ft.

The well is in I.&G.N. Survey 11, about 5½ miles northeast of the prolific West Ranch field, in an area which has been the scene of considerable leasing activity during the past several months. Companies holding close-in protection acreage include Humble Oil & Refining Co., Shell Oil Co., Inc., Sun Oil Co., Tide Water Associated Oil Co., Arkansas Fuel Oil Co., and British American Oil Co.

Approximately 1 mile northwest of the above well, in the S. F. Austin Survey, Barnsdall Oil Co.'s No. 1 Lazarus is drilling in shale and lime below 4,700 ft., and the well was scheduled to start coring for the Frio at the close of the week. About 2 miles northeast of the Texana field, Heep Oil Corp.'s No. 1 Henderson was drilling in shale below 6,393 ft., following a drill-stem test at 5,937-47 ft., which developed 500 lb. working pressure through a ⅝-in. choke top and bottom of the testing tool.

Mauritz Extended

The Mauritz field, Jackson County, was extended about ½ mile southwest with the completion of Seaport Oil Co.'s No. 1 T. N. Mauritz. The well was drilled to 5,708 ft., and completed through perforated casing at 5,552-58 ft., for an initial production of 120 bbl. per day, flowing through a 9/64-in. choke.

In the Chocolate Bayou field, Glenn McCarthy was preparing to retest No. 1 Andrau after squeezing off perforations at 11,406-12 ft., from which the well flowed 169 bbl. of distillate and 129 bbl. of salt water per day through a ¼-in. choke. The well is in the H.T.&B. Survey 5, about 1½ miles northwest of the discovery well. On the north flank of the Danbury dome Humble Oil & Refining Co.'s No. 2 Bassett-Blackely was abandoned at 9,190 ft. after an electrical survey and side-wall cores showed no sands worthy of testing.

The staking of a second Tertiary Wilcox location in the Sheridan area, Colorado County, by Shell Oil Co., Inc., has attracted much attention. The well will be No. 1 R. H. Goodrich, 467 ft. from the south and east lines of a 207.08-acre tract in the Henry Heller Survey. The site is about a half mile west of the company's No. 1 Plow Realty Co., which is reported to have logged favorable showings in the Wilcox, although details as to where the showings were cored were not available.

In the North Houston area, Harris County, Kirby Petroleum Co. was preparing to test No. 1 Harbaugh, 1,200 ft. southeast of production in the T. M. Dorset Survey. Gas sand was topped at 6,789 ft., and oil sand at 6,822-30 ft. The hole is bottomed in salt-water sand at 6,840 ft., and casing is being cemented at this depth.

In the Ogburn area, Harris County, Joyce Richardson's No. 1 Marks, J. C. Ogburn area, has been abandoned at a total depth of 7,525 ft. An electrical survey showed slight showings at intervals from 7,116-7,420 ft.

H. C. Cockburn's No. 1 Leveridge, the discovery well of the East Bernard field, Wharton County, was officially completed for an initial production of 12 bbl. of 55-gravity distillate per day, flowing through two bottom-hole chokes, and a series of chokes at the surface. Tubing pressure was 3,150 lb. and casing pressure 3,350 lb. Production is from the Cook Mountain formation through perforated casing at 8,070-90 ft.

In the same county, about 86 miles south of Hillje, Titanic Oil Co. is moving in a rig for No. 1 C. T. Denman, 466 ft. from the north and west lines of the SE Section 3, Morris & Cummings Survey. The location is about 900 ft. south of the company's No. 1 Carlson, which is flowing oil and salt water while testing through perforated casing at 5,806-09 ft. Tubing pressure was 260 lb. and shut-in casing pressure 500 lb.

Offshore from Chambers County in Galveston Bay, Standard Oil Co. of Texas was retesting No. 61 State after the well flowed salt water with no show of oil or gas through perforated casing at 9,033-12 ft. A series of perforations have been made at 8,535-40 ft., and at 8,569-75 ft., and the well is expected to be tested at this depth as side-wall cores recovered sand with an oil odor.

Stanolind Oil & Gas Co.'s No. 1 Garrow, a southeast outpost in the Martha field, Liberty County, tested salt water through perforated casing at 9,142-50 ft., and is being tested through perforated casing at 8,512-20 ft.

In the Spurger area, Tyler County, Republic Production Co.'s No. 4 fee, about 1,200 ft. southeast of No. 1 fee, is shut down waiting for orders at a total depth of 5,000 ft., after drill-stem testing at 4,638-47 ft., and at 4,743-49 ft., recovered salt water with no showing of oil or gas.

South Louisiana

Along the Louisiana coast interest was centered on the Mermentau area, Jefferson Davis Parish, where preparations were being made to test H. M. Naylor and others' No. 1 Acadia Development Co. in Section 12-10s-2w. The well was drilled to 10,000 ft., and 7-in. casing was cemented on bottom, following an electrical survey which showed three possible sands. The survey showed sand and shale with an odor of oil, with 5 ohms resistivity on normal curve and 1.5 ohms resistivity on fourth curve at 9,703-18 ft. Sand with an odor of gas and distillate at 9,238-48 ft., showed 5 ohms resistivity on normal curve, and ⅓ ohm resistivity on fourth curve. Sand with a gas odor was logged at 9,112-25 ft., and showed 4 ohms resistivity on normal curve and ⅓ to 1 ohm resistivity on fourth curve. Preparations are being made to test the section at 9,114-25 ft. The well topped the Discorbis at 8,950 ft.; Heterostegina at 9,440 ft., and the Bolivina at 9,980 ft.

In Cameron Parish, Phillips Petroleum Co.'s No. 1 Miami Corp., Section 11-14s-6w, is coring in shale below 10,269 ft. Sand with a slight odor of oil was cored at intervals at 10,258-69 ft. This well attempted to blow out several weeks ago which resulted in the drill stem being stuck, and the hole was plugged back and sidetracked.

Union Oil Co.'s No. 1 Webster White, White Lake area, Vermilion Parish, is fishing for drill pipe at a total depth 10,353 ft. Sand with a slight odor of oil was logged at 10,231-48 ft.

Shell Oil Co.'s No. 1 Coastal Club, Chalkley field, Cameron Parish, was being watched with much interest as the well is showing indication of opening production from a deeper sand. Sand and shale with a good odor of oil was cored at 10,045-54 ft., and the well is coring ahead, showing considerable gas pressure. Location is in Section 27-12s-6w, about 1 mile southeast of production.

On the Bayou Blue dome, Iberville Parish, T. G. Markley and Crosby Drilling Co.'s No. 1 Baiste, was completed for a dry gas well from a shallow sand at 1,723-51 ft. No attempt was made to drill the well to the 5,000-ft. pay recently opened on the southwest flank.

On the west flank of the Fausse Point salt dome, Iberia Parish, Sun Oil Co. opened production from a shallow sand with the completion of No. 1 Kling & Walet in Section 26-11s-8e. The well was drilled to a total depth of 1,219 ft., and was completed in sand at 1,105-50 ft. for an initial production of 9 bbl. of 23-gravity oil per hour, flowing through a 5/32-in. choke. Tubing pressure was 80 lb. and casing pressure 100 lb.

The newly opened Erath field Vermilion Parish, received a new operation as Texas Co. staked location for No. 1 A. Trahan, Section 22-13s-4e, about 1 mile southeast of the discovery well. North of the discovery well, Strake Petroleum Co.'s No. 1 Caldwell, Section 41-13s-4e, is drilling in shale below 8,500 ft.

In Terrebonne Parish, on the Point aux Fer prospect, Barnsdall Oil Co. is reported to be making preparations to test No. 1 Nelson Development Co. The well is bottomed in salt water sand at a total depth of 11,731 ft., and is being plugged back to test sand at 7,417-29 ft., which showed favorable indications on an electrical survey.

Glassell & Glassell were completing two wells on the Anse La Butte dome, St. Martin Parish, No. 2-A Breaux is flowing ungaged from sand at 4,551-76 ft., while No. 1 Patin has cemented casing to test sand at 4,748-59 ft. The same operators staked location for No. 1 Tortoris in Section 122-9s-5e.

TEXAS GULF COAST COMPLETIONS IN PROVEN FIELDS

Brazoria County

Danbury field: Humble Oil & Refining Co.'s No. 2 Bassett-Blackley, 9,190 ft., dry and abandoned. Hastings field: Stanolind Oil & Gas Co.'s No. 13 Edwards, sand 6,080-90 ft., 350 bbl., ¼-in. choke. West Columbia field: Texas Co.'s No. 94 Hogg, sand 3,149-3,200 ft., 262 bbl., ¼-in. choke.

Chambers County

South Cotton Lake field: Salt Dome Oil Co.'s No. 1-H Lawrence, sand 6,514-20 ft., 141 bbl., ⅛-in. choke.

Fort Bend County

Thompson field: Gulf Oil Corp.'s No. 10-Y R. A. Wolters, sand 4,295-4,317 ft., 114 bbl., ⅛-in. choke. Humble Oil & Refining Co.'s No. 34 Davis, sand 5,398-5,410 ft., 530 bbl., ¼-in. choke. Quintana Petroleum Corp.'s No. 12 Wolters, perforated casing 4,328-34 ft., 388 bbl., ¼-in. choke.

Orange County

Orange field: D. M. Wallace's No. 1 Norwood, 5,904 ft., 136 bbl., ⅛-in. choke.

Harris County

Fairbanks field: Amerada Petroleum Corp.'s No. 21 Foley, perforated casing 6,830-36 ft., 148 bbl., ⅛-in. choke. Friendswood field: Humble Oil & Refining Co.'s No. 23 West Production Co., sand 6,034-44 ft., 525 bbl., ¼-in. choke. South Houston field: J. T. Driscoll's No. 1 Williams, perforated casing 4,738-69 ft., 306 bbl., ¼-in. choke. Tomball field: Humble Oil & Refining Co.'s No. 1 Manger, sand 5,549-70 ft., 207 bbl., ¼-in.

(Continued on Page 116)

Rocky Mountain Area

By T. R. INGRAM

1,000-Bbl. Well in Kevin-Sunburst Field in Montana

DENVER, Colo., May 20.—The Lance Creek field in Wyoming will have another outlet for its increasing production through the construction of a pipe line to Newcastle where the Yale Oil Corp. will take 2,000 bbl. per day as soon as the line is in operation and it has completed the enlargement of its refinery. It will be built by A. B. Cobb and the Yale company.

The principal completions for the week were in the Kevin-Sunburst field in Montana, where gusher days were recalled. The Big West Oil Co.'s No. 2 Ellingson flowed approximately 50 bbl. an hour before the valve could be closed when it hit the contact and is pinched down to 100 bbl. per day. There were four other completions in the field including one dry hole and a 100-bbl. well. The Cut Bank field had one completion in A. B. Cobb's No. 5 Van Demark for 25 bbl. per day.

Wyoming had two completions, both dry holes. The California Co.'s Pinedale test in Sublette County, which went to 10,003 ft., and established a record for the state, was abandoned, and the Pilot Oil Co.'s No. 5 Enos, in Pilot Butte, was plugged and abandoned.

New operations included three in Lance Creek, one on the Frannie dome in V. M. Kirk's No. 3 Government, three in Fallon County, Montana, three in Cut Bank, and one in Kevin-Sunburst.

A test in southern Colorado will be drilled by the Atlati Royalty Corp., one of the DeGolyer enterprises, and the Carter Oil Co. is core-drilling another structure in the same general region.

NEW MEXICO

The buying of two producing wells and a 160-acre lease in the Halfway field of Lea County by Argo Oil Corp., together with the abandonment of several wildcats throughout Eddy County, headed the week's development in Southeast New Mexico.

In the Halfway field of western Lea County, Argo Oil Corp., Fort Worth, Tex., purchased from Westlea Oil Co. 160 acres and two producing wells for the consideration of $60,000 cash and an oil payment. The purchase included Westlea Oil Co.'s discovery producer in the field which was opened last year. Acreage acquired consists of W½ SE and E½ SW Section 16-20-32. Before the discovery well was drilled Argo purchased the W½ SW and E½ SE of the section. The new acreage gives the firm the entire S½ of the section.

Abandonments during the week included two in the Red Lakes area of Eddy County, two in the Loco Hills field and one north of the Grayburg area in northern Eddy County.

Leasing in Lea

Phillips Petroleum Co. is reported to have leased several thousand acres during the past few months in northern Lea County. The firm is reported to have paid as high as $25 per acre for some tracts. The acreage lies west of the Yoakum County line and the acquisition is based on a core test drilled in the area about 4 months ago.

Eddy County

Sanders Bros.'s No. 1 De Temple, NW NW Sec. 27-19-31.
Bassett & Birney's No. 1 Platt, SW cor. Sec. 26-18-26. Old failure being D.D. below 2,342 ft.; drlg. 2,351 ft.
Max Weathers' No. 1 Flood, SE SE Sec. 24-18-23. Drlg. 780 ft.
M. Yates, Jr.'s No. 1 McCall, SW SW Sec. 24-18-26. Drlg. 910 ft.
Jack Harris' No. 1 Josey, SW SE Sec. 19-20-23. Spd. and S.D.
Schumacker's No. 1 Levers, NE NE Sec. 33-16-29. Loc.
J. B. Mulcock's No. 1 Etz, 660 ft. from S and W lines, Sec. 25-16-30. Drlg. 1,210 ft.
Everts' No. 1 Greer, SE cor. Sec. 31-16-31. P.B. 3,690 ft.; swbd. 5 B.O.P.D. for 7 days; tstg.
Everts & Moran's No. 1 Ranux, NE NW Sec. 18-23-26. T.D. 375 ft.; S.D.
J. B. Cowden's No. 1 State, SW SE Sec. 3-17-29, between Root field and High Lonesome field. R.U. mach.
G. A. Grober's No. 1 Wright, 1,080 ft. from N and W lines, Sec. 25-18-28. Tstg. S.O.&G. 1,382 ft.; est. 10 B.O.P.D.; prep. D.D. 1,833 ft.
G. M. Cone's No. 1 Hare, NW NW NE Sec. 14-16-28, 3 mi. W of High Lonesome field. Drlg. 1,450 ft.
Artesia Drlg. Co.'s No. 1 Hoffman, SE SE SE Sec. 14-17-24. S.D.R. 975 ft.; est. 1,250,000 cu. ft. gas at 938 ft.; drlg. 1,170 ft.
L. E. Elliott's No. 1 Elliott, SE SE SE Sec. 24-17-29. S.S.O. 3,255-75 ft.; S.D.O. 3,482 ft.; made 1 B.O. and 4 B.W. in 24 hrs.; drlg. 3,790 ft.
Anderson's No. 1 Neeson, 330 ft. from W and 2,310 ft. from N lines, Sec. 4-16-30. Prep. D.D. 2,650 ft.
Frederick's No. 1 Reed, 1,980 ft. from S and W lines, Sec. 28-24-38. O.W.D.D.; est. 1,500,000 cu. ft. gas at 2,300 ft.; U.R. 2,665 ft.; T.D. 2,893 ft.
Wilder's No. 1 Young, 1,650 ft. from N and W lines, Sec. 23-16-29. S.G. 1,805 ft.; S.D.O. 3,095 ft.
Sam Montgomery's No. 1 Kaltenbach, 330 ft. from N and W lines, Sec. 24-16-27. Fsg. tools 2,243 ft.
Thomas & Bowers' No. 1 H. W. Etz, 2,310 ft. from N and 330 ft. from W lines, Sec. 13-16-30. T.D. 3,744 ft.; 2000 ft. F.I.H.

Dona Ana County

Picacho O. & G. Co.'s No. 12 Armstrong, Sec. 15-23s-1w. S.D.O. 2,620 ft.
Slack & Mahres' No. 1 Simmons, Sec. 35-22s-5e. T.D. 2,785 ft.; S.D.O.

Chaves County

Farrar-Jones-Cunningham's No. 1 Samples, 330 ft. from S and E lines, Sec. 1-7-27. S.D.R. 98 ft.

Luna County

O. D. Berry's No. 2 Berry, Sec. 33-22-10. S.D.R. 145 ft.

Lea County

Gulf Oil Corp.'s No. 1 Amanda E. Drinkard, NW SE Sec. 25-22-37, in Skelly area, 5,000-ft. test. W.O.C. 7-in. csg. 3,476 ft.
J. D. Barefield's No. 2 Stroup, 1,980 ft. from N and E lines, Sec. 12-18-32. Drlg. 3,865 ft.
Stogner & Weiner's No. 1 State, SE SE Sec. 30-12-32. Rng. csg. 1,228 ft.
Stanley & Weiner's No. 1 Saunders, NE NE Sec. 20-21-38. C.&P.

Otero County

Ernest's No. 1 Ernest, Sec. 20-25-7. Straightening hole 2,993 ft.
Otero Oil Co.'s No. 1 State, SE NW Sec. 5-22-10. S.D.O. 825 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen grant, 2,310 ft. N and W lines, Sec. 16-3-1. S.D. 600 ft.

SOUTHEAST NEW MEXICO COMPLETIONS

Eddy County

In the Red Lakes field Sam Sanders' No. 3 Berry, Section 24-17-27, dry and abandoned at total depth of 620 ft. Sam Sanders' No. 4 Berry, Section 24-17-27, dry and abandoned at total depth of 505 ft.

A wildcat, Clark & Cooper's No. 1 Gates, NW SE Section 20-16-27, dry and abandoned at total depth of 2,500 ft.

In the Loco Hills field Allen, Fair & Pope's No. 5-A State, SE NE Section 36-17-29, dry and abandoned at total depth of 2,835 ft. after missing regular field pay section. Continental Oil Co. and Yates' No. 2-3 Brainard, NE SE Section 3-18-29, flowed 96 bbl. oil in 3 hours through ¾-in. choke from pay from 2,622-42 ft. after 150-qt. shot. S. P. Yates' No. 5 Brainard, SW NW Section 3-18-29, flowed 260 bbl. oil in 12 hours through 1-in. choke from pay from 2,567-80 ft. after 100-qt. shot. R. C. Underwood's No. 1 Guy, NW NE Section 15-18-29, dry and abandoned at total depth of 2,630 ft.

Lea County

In the Maljamar field Barney Cockburn's No. 9-B Baish, SW NW Section 27-17-32, flowed 200 bbl. daily through open 2-in. tubing after 120-qt. shot in pay from 3,830-3,950 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc.'s No. 2 North Albuquerque, NE SE NW Sec. 19-11n-4e. Drlg. 4,760 ft.
Norins Realty Co., Inc.'s No. 2 Pajarito, Sec. 22-9n-1e. S.D. 2,000 ft.

McKinley County

Petroleum Products Corp.'s No. 7 Hospah, C SW SW Sec. 36-18n-9w. Spd. to 50 ft.; S.D.

San Juan County

The Continental Oil Co.'s No. 105 Rattlesnake, NE SW SW Section 12-29n-19w, Rattlesnake field, was dry in the Dakota at 858 ft., total depth, and was plugged and abandoned.

Claude Carroll's No. 1 Cornell, C SE NE Sec. 11-29n-12w. Drlg. 550 ft.
Kutz Deep Test, Inc.'s No. 1 Govt., C NW NW Sec. 28-28n-10w. T.D. 950 ft.; landed 12¼-in. on bttm.
Continental Oil Co.'s No. 100 Rattlesnake, SE NW NE Sec. 2-29n-19w. S.D.O. 7,407 ft.

Socorro County

Joiner Oil Corp.'s No. 1 Belen Grant, SE NW Sec. 10-3n-1e. Drlg. 850 ft.

Valencia County

C. A. Grober et al's No. 1 Fuqua, NE NE Sec. 19-5-3e. T.D. 3,850 ft.; C.O. below 3,100 ft.

COLORADO

Custer County

Henry Donnelly's No. 1 Hodges, SE NE Sec. 26-21s-69w. Dpnd. to 1,662 ft.; S.D. for csg.

El Paso County

F. F. Hintze et al's No. 1 State, CSL SE SE Sec. 16-11s-66w. T.D. 1,180 ft.; C.O. cave and lowering 8¼-in.

Fremont County

John Lipps' No. 1 fee, C.T. in south Florence on farmout from Continental Oil Co., C SW SW Sec. 11-19s-70w. Loc.

Huerfano County

Ira E. Miller et al's No. 1 Hamilton, SE SE NW Sec. 20-29s-67w. T.D. 1,365 ft.; R.U. to res.
I. E. Siderman-White et al's No. 1 Martinez, C SW NE Sec. 33-26n-67w. Drlg. below 1,400 ft.

Jackson County

W. N. W. Corp.'s No. 1 North Park Coal, NW NW Sec. 18-9n-78w. T.D. 4,350 ft.; U.R. 8¼-in. for W.S.O.

La Plata County

Nick Spatter's No. 1-X Bryce, C SW SW Sec. 31-33n-9w. Drlg. sh. below 3,800 ft.

Larimer County

Continental Oil Co.'s No. 1 Whitaker-Blunck, NE NE NW Sec. 30-8n-68w. T.D. 4,504 ft.; prep. to D.D.
Ed Shogren et al's No. 1 Frazier, SE Sec. 31-4n-69w. S.D. 910 ft.; to change over to C.T.

Las Animas County

The Atlati Royalty Corp., a DeGolyer enterprise, and a former subsidiary of the Felmont Corp., of Houston, Tex., is reported preparing to drill on the Little Dome structure in Section 8-29s-63w, on acreage obtained from the Continental Oil Co. The structure is located 15 miles west of the Model dome, which was developed for helium in 1929 by Petroleum Information, Inc., of Denver, of which C. E. Shoenfelt is the head, for the account of the Girdler Corp., of Louisville, Ky., operating in Kansas and Colorado as the Helium Co. Contract will call for a well to 3,000 ft., or the granite. It will start in the Dakota. The dome was first observed by Mr. DeGolyer from the air while flying from Colorado Springs to Amarillo.

Logan County

West Plains Oil Co.'s No. 1 Sheldon, SE NW SW Sec. 3-10-55w. Drlg. 1,630 ft.

Moffat County

Mountain Fuel Supply Co.'s No. 2-A Kuykendall, SW NW SW Sec. 23-12n-100w. M.I.M.; (cor. loc.).
Mountain Fuel Supply Co.'s No. 6 Wilson, C Lot 2, SE Sec. 14-12n-100w. Loc.
Mountain Fuel Supply Co.'s No. 5 Wilson, SW SW NW Sec. 23-12n-100w. Cmtd. 7-in. on bttm. at 2,592 ft.; prep. to perf. and test.
Great Divide Pet. Co.'s No. 1 Wyatt, SE Sec. 4-6n-92w. T.D. 724 ft.; res. C.O.; 10-in. frozen at 650 ft.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Sec. 31-36n-17w. S.D. 5,285 ft.

Otero County

The Carter Oil Co. is reported moving in to drill a series of shallow wells on the Timpas block in Townships 26 and 27s, Ranges 57 and 58w, for the purpose of obtaining geological information concerning the structure. The company acquired a block of approximately 10,000 acres in that area in 1936 on the basis of the surface structure known to be present. The

structure is 25 miles southwest of La Junta. The crew will work out of the town of Ayer. The Reiter-Foster Oil Co. assembled a block on the structure about 16 years ago, but did not explore its possibilities.

Ouray County

Ridgway Pet. Synd.'s No. 1 Bennett, C NE SE Sec. 2-45n-8w. Drlg. below 100 ft.

Park County

South Park Oil Co.'s No. 1 Leman, NE NE SE Sec. 34-11s-75w. Drlg. 7,243 ft.

Rio Blanco County

W. L. W. Royalty Corp.'s No. 1 Rector, SE Sec. 34-2n-102w. Drlg. 740 ft.
Texas Co.-California Co.'s No. 3 Unit, NE NE NE Sec. 27-3n-94w. Drlg. 4,109 ft.

Routt County

L. C. Craig-E. L. Moore's No. 1-X Erwin, C SW NE Sec. 33-7n-85w. T.D. 2,253 ft.; W.O. csg.

Washington County

Thurman Oil Tr.'s No. 1 Ruby, NW NW SW Sec. 3-5s-52w. S.D. 1,800 ft. in sd.; M.I. heavier rig.

WYOMING

Big Horn County

McDonald & Curtis' No. 1 Orchard, SE NW Sec. 24-51n-93w. Spd. and S.D. to comp. R.U.
Frank S. Scott's No. 1 Robertson, SE SE SE Sec. 6-54n-93w. S.D. 650 ft.; indef.

Carbon County

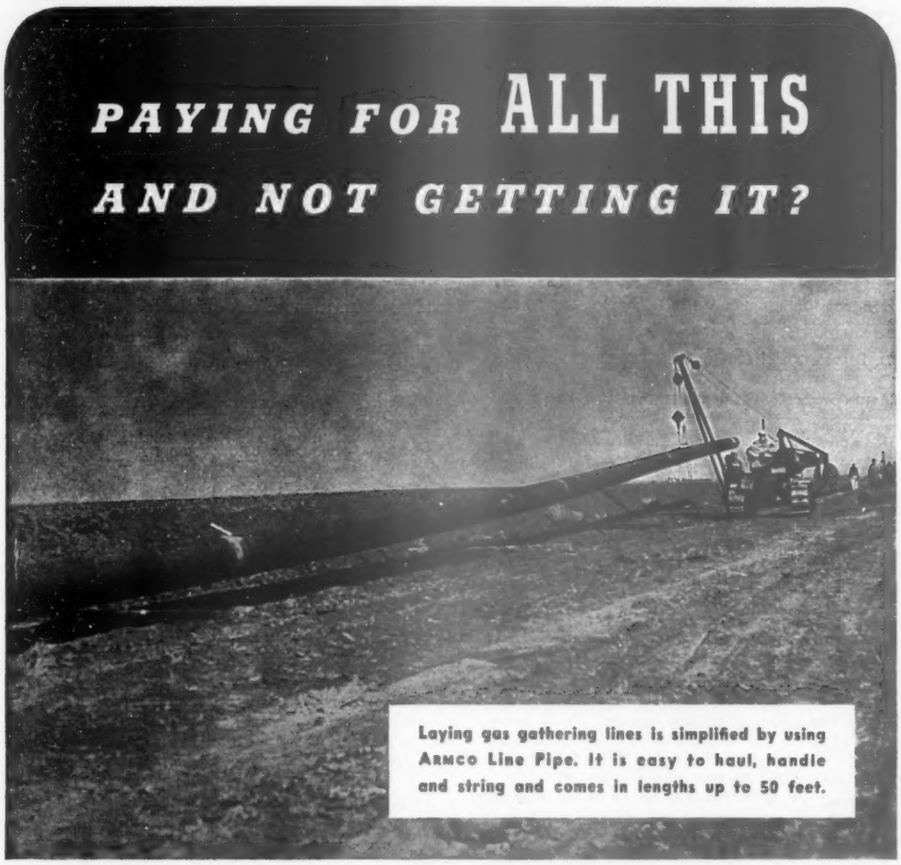
Sinclair-Wyoming Oil Co.'s No. 14 Unit, NW SW NE Sec. 7-26n-89w. Drlg. 1,158 ft.; cmtd. 13⅜-in. 501 ft.
MacKinnie Oil & Drlg. Co.'s No. 2 Union Pacific, NE SE NE Sec. 21-22n-78w. T.D. 301 ft.; cmtd. surf. csg. 288 ft.
Albert Dev. Synd.'s No. 1 Boeke, SW NW Sec. 18-25n-79w. Drlg. 969 ft.
Ohio Oil Co.'s No. 12 State, CWL NE Sec. 34-20n-78w. Loc.
Tri-State O. & R. Co.'s No. 17, NW SE NW Sec. 20-21n-80w. Drlg. 610 ft.

Converse County

Shawnee Expl. Co.'s No. 1 Salisbury, SE SW NE Sec. 27-32n-6w. Rdy. to spd.

Crook County

Union Oil Co. of Calif.'s No. 1 Casey, SE NE NW Sec. 3-57n-62w. B.R.
Vickers Pet. Co.-Continental Oil Co.'s No. 1 Duncan-Lobban, NE NW SW Sec. 28-57n-64w. M.I.M.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LINE PIPE AND CASING

Fremont County

The Pilot Oil Co.'s No. 5 Enos, CSL SE NE Section 21-3n-1w, Pilot Butte area, was abandoned in the Cody shale at 1,180 ft., total depth. It had a show of oil at 999-1,000 ft.

Logue Trust Co.'s No. 1 Wisner, NE SW Sec. 8-33n-98w. Spdg. 10 ft. in Cody sh.; (first report—Government Draw dist.).
Sinclair-Wyoming Oil Co.'s No. 12 Unit, SW SE NW Sec. 23-32n-95w. Cmtd. 13⅜-in. at 660 ft.; W.O.C.
Tropic Oil Co.'s No. 1 Govt., C SE SW Sec. 34-27n-90w. T.D. 3,495 ft.; cmtd. off tools after sdtrkg.
F. F. Hintze's No. 1 Govt., CWL NW NW Sec. 7-28n-92w. T.D. 1,135 ft.; P.B. to 1,052 ft.; S.D. indef.

Hot Springs County

Boybell Oil Co.'s No. 2 Kyne, NW SE SW Sec. 22-43n-92w. Drlg. 623 ft. in Front.; 6⅝-in. at 523 ft.

Lincoln County

H. C. Harris et al's No. 1 Govt., SE NW NW Sec. 23-21n-117w. Drlg. L. 2,939 ft.
Fontenelle Dev. Co.'s No. 1 Pomroy, NE SW Sec. 5-24n-113w. Drlg. 900 ft.; cmtd. 10-in. at 765 ft.; wtr. sd. at 850 ft.

Natrona County

The General Petroleum Corp.'s No. 1-21-G, NW cor. Section 21-35n-77w, Cole Creek district, is being pumped from the Shannon sand at 4,530-70 ft. through perforated casing for a test. It is making around 300 bbl. per day.

Lewis Gebhart's No. 1 Govt., NW NE SE Sec. 10-39n-78w. Cmtd. 10-in. at 92 ft.; W.O.C.
Continental Oil Co.'s No. 1 McGrath, C NW SW Sec. 15-34n-78w. Cg. for Tensleep at 7,940 ft.
Royal Oil Corp.'s No. 1, SW SW SW Sec. 26-35n-80w. Drlg. 205 ft.
Connelly Drlg. Co.'s No. 1 State, SW SW NW Sec. 36-36n-81w. T.D. 1,420 ft.; C.O. to res.

Niobrara County

Lance Creek had three new operations, but no completions.

A. B. Cobb's No. 6 Novick, SE NE NW Sec. 6-35n-65w. Cmtd. 13-in. at 313 ft.; W.O.C.; (first report).
Continental Oil Co.'s No. 7-A Dielman, NW NE NW Sec. 8-35n-65w. R.U.R.; (first report).
Continental Oil Co.'s No. 19 Tom Bell, NW NE SE Sec. 33-36n-65w. B.R.; (first report).
Argo Oil Co.'s No. 13-A Elliott, SE NE NW Sec. 5-35n-65w. Rig; W.O. equip.
Ohio Oil Co.'s No. 16 Lamb-1, NW NE NE Sec. 5-35n-65w. Drk.; rig; W.O. equip.
Continental Oil Co.'s No. 7 Sam Joss, NW SW NE Sec. 6-35n-65w. Drlg. 1,395 ft.; cmtd. 10¾-in. at 313 ft.
Continental Oil Co.'s No. 11 Otto Rohlff, SE NE SE Sec. 31-36n-65w. Drlg. 1,660 ft.
Ohio Oil Co.'s No. 14 E. Lamb-Acct. 2, C SW SE Sec. 5-35n-65w. Drlg. 3,965 ft.
Continental Oil Co.'s No. 3 E. Rohlff, SE SW NW Sec. 32-36n-65w. Drlg. 3,557 ft.
Continental Oil Co.'s No. 7-B Dielman, SE SE NE Sec. 7-35n-65w. Cg. 5,438 ft.; T. Leo sd. 5,430 ft.
Ohio Oil Co.'s No. 16 Putnam, SW SW NW Sec. 4-35n-65w. Drlg. 5,392 ft.; T. Leo 5,381 ft.
Ohio Oil Co.'s No. 15 Carrie Putnam, NW NE SW Sec. 33-36n-65w. T.D. 5,541 ft.; trying to free D.P.
H. D. Moore's No. 1 Berggren, SE NW Sec. 23-35n-63w. T.D. 2,526 ft.; rng. 4¾-in. for W.S.O.

Park County

V. M. Kirk is moving in rotary for his No. 3 Government on the north side of the Frannie field. It is a north offset to the Minnelusa Oil Corp.'s No. 1 Roney, a drilling well.

V. M. Kirk's No. 3 Govt., SW SW NW Sec. 24-58n-98w. M.I. rotary; (first report).
Yale Pet. Corp.'s No. 2 Owens, NE SW SW Sec. 29-52n-100w. C.&P.
Yale Pet. Corp.'s No. 2 Frisby, NW SE NW Sec. 32-52n-100w. T.D. 3,472 ft.; tstg.; flwd. 450 bbl. in 6 hrs. from Embar after acd. with 2,000 gal.
Yale Pet. Corp.'s No. 1-B Frisby, SW NE NE Sec. 31-52n-100w. C.&P.
Minnelusa Oil Corp.'s No. 1 Roney, SW SW NW Sec. 24-58n-98w. Drlg. 2,720 ft.

Sublette County

The California Co.'s No. 1 Unit 1, C SW NE Section 14-31n-109w, Pinedale district, a deep test of the Tertiary beds, which was drilled to 10,003 ft. last year and gave considerable promise of being a discovery, has been abandoned. It plugged back and cemented the 7-in. at 8,509 ft. for a test. It showed very heavy pressure, but the quantity of gas was small and the well was shut down for the winter. Further testing the past few weeks failed to improve the prospects. It is the deepest well drilled in Wyoming.

North La Barge Oil Co.'s No. 1 Govt., NE SE NE Sec. 28-27n-113w. T.D. 992 ft.; R.U.C.T. to D.D.
Yellowstone Oil Co.'s No. 1 Henry Budd, SW SE SE Sec. 6-30n-112w. T.D. 1,070 ft.; U.R. 10-in. to 986 ft. for W.S.O.
Texas Co.'s No. 1-E, NW Sec. 27-27n-113w. T.D. 941 ft.; 8⅝-in. at 932 ft.; C.O.
Marvel Oil Co.'s No. 1-H Govt., CEL NE SE Sec. 28-27n-113w. T.D. 923 ft., in sat. sd.; cmtd. 6⅝-in. at 918 ft.; W.O.C.
North La Barge Oil Co.'s No. 3 Govt., SE SE NE Sec. 28-27n-113w. Drlg. 200 ft.

Sweetwater County

Gus Pagrantz et al's No. 1 Clark, C NW NE Sec. 22-19n-104w. M.I.M.

Sinclair-Wyoming Oil Co.'s No. 93-A, SW NW NW Sec. 11-26n-90w. T.D. 1,976 ft.; cmtd. 5½-in. at 1,972 ft. on T. Sundance; R.U.C.T.
Red Desert Corp.'s No. 1 Aspden, NW SW NW Sec. 34-18n-103w. B.R.
Vermillion Oil Co.'s No. 2 Govt., SW SW SW Sec. 7-12n-99w. Drlg. 2,570 ft.

Uinta County

Elvnor Oil Co.'s No. 1, CEL SE SE Sec. 6-18n-116w. Cumberland dist. Cmtd. 12½-in. at 113 ft.

Washakie County

Paul Boether's No. 1 Govt., SW SW NW Sec. 4-47n-90w. Drlg. 2,305 ft.

Weston County

Geo. Keisling's No. 2 Lundberg, CWL NE SE Sec. 35-46n-64w. Rdy. to spd.
Riggs Oil Co.'s No. 4, CNL NE SE Sec. 16-46n-64w. Loc.; will go to Sundance with C.T.
Patterson Oil Co.'s No. 21 fee, NW SW SE Sec. 17-46n-63w. T.D. 700 ft.; swdg. out csg. after shot with 18 qt.
Wheedon Oil Co.'s No. 5 State, NW SW SE Sec. 16-46n-63w. Drlg. 240 ft.
Gose Oil Synd.'s No. 1, NE NE NE Sec. 28-47n-63w. Drlg. 4,963 ft.
Bruce C. Teeter's No. 1 State, C SW NE Sec. 36-32n-61w. T.D. 2,270 ft.; P.B. and tstg. upper horizon.

MONTANA

Big Horn County

The Big Horn Oil & Development Co.'s No. 43, NE NW SW Section 15-1s-33e, Hardin gas field, was completed in the Frontier at 680-700 ft., for 31,000 cu. ft. of gas per day.

Blaine County

F. J. Buscher's No. 1 Evey, C NE SE Sec. 12-32n-17e. S.D. 61 ft.

Carbon County

Ohio Oil Co.'s No. 9 Souders, C NE SW Sec. 2-7s-21e. Recmtd. 5,500-11 ft.; drld. out to 5,511 ft.; tstg.
Miracle Oil Co.'s No. 2 Govt., CWL NE SE Sec. 3-6s-23e. T.D. 2,338 ft.; fsg. for tools stk. at 1,560 ft.
R. C. Tarrant's No. 2 McKay, C SE NW Sec. 4-6s-18e. T.D. 2,810 ft.; sdtrkd. tools at 2,615 ft.; landed 8¼-in. at 2,800 ft. to S.O.W. in T. Lakota at 2,810 ft.

Choteau County

Security Pet. Corp.'s No. 1 Johnson, C NE NE Sec. 23-26n-3e. T.D. 2,122 ft.; show heavy oil in T. Embrick sd. at 2,091 ft.; U.R. 6⅝-in. to carry to T. of Mad.

Fallon County

Montana-Dakota Utilities Co.'s No. 140, SE NW NE Sec. 24-9n-58e, Cedar Creek dist. R.U.
Montana-Dakota Utilities Co.'s No. 141, SE NW NE Sec. 24-8n-59e. R.U.
Montana-Dakota Utilities Co.'s No. 142, NE SW SW Sec. 33-7n-60e. R.U.
Montana-Dakota Utilities Co.'s No. 143, SE NW NE Sec. 4-6n-60e. R.U.

Fergus County

C. E. Emmons et al's No. 3, CWL NW NW Sec. 5-21n-18e. Drlg. 460 ft. in Eagle sd.; S.G. at 380 ft.

Glacier County

Cut Bank had one completion and three new operations.

A. B. Cobb's No. 5 Van Demark, CSL SE NE Section 35-35n-6w, swabbed 25 bbl. per day at 2,819 ft., total depth, from the Cut Bank sand at 2,775-2,815 ft. after a shot with 10 qt. at 2,778-2,815 ft. The Sunburst was cored and showed slight saturation at 2,752-58 ft.

R. C. Tarrant's No. 3 Hope, C NE Sec. 18-34n-5w. R. O.G.; (first report).
Annand-Hutchings' No. 5 Federal Ld. Bnk., CSL NE SW Sec. 11-34n-6w. R.U.; (first report).
Texas Co.'s No. 8 Unit 9, C NW NE Sec. 9-32n-5w. Loc.; (first report).
Glacier Prod. Co.'s No. 4 Corrigeux, C SE SW Sec. 28-33n-5w. Drlg. 840 ft.; Colo. 680 ft.; 10¾-in. 700 ft.
Consolidated Gas Co.'s No. 3 State, SE NW SE Sec. 26-35n-6w. B.R.
Santa Rita O. G. Co.'s No. 3 Rasmussen, C NW SE Sec. 32-33n-5w. Spdg. 100 ft.
Texas Co.'s No. 2 Unit 11, SE NW Sec. 11-35n-6w. Drlg. 1,325 ft.; Colo. 650 ft.; 10¾-in. 676 ft.
Glacier Prod. Co.'s No. 3 Whetstone, C SE NW Sec. 8-33n-5w. Drlg. 2,520 ft.
Glacier Prod. Co.'s No. 5 Bonnet, C NW SE Sec. 4-32n-5w. Drlg. 250 ft.
Texas Co.'s No. 5 State, C NE NE Sec. 16-32n-5w. Drlg. 2,125 ft.
Texas Co.'s No. 5 Curran, C NW SE Sec. 8-32n-5w. Drlg. 1,785 ft.
A. Kately's No. 1 Kramer, NE SE NE Sec. 15-34n-6w. Drlg. 2,890 ft.
Castle-Pardee's No. 2 Tarrant-Corriguex, SE NE NE Sec. 2-33n-6w. Cmtd. 10¾-in. at 550 ft.; Colo. 530 ft.
Santa Rita O. & G. Co.'s No. 5 Lander, NE SW SE Sec. 16-35n-6w. Drlg. in at 2,820 ft.; 300 ft. O.I.H.
Texas Co.'s No. 4 Tweedy, C SE NW Sec. 21-35n-6w. Drlg. 2,609 ft.; cmtd. 8⅝-in. at 2,580 ft.
Helmac, Tr.'s No. 3 Govt., Lot 3, Sec. 32-33n-5w. Drlg. 2,775 ft.
Cobb-Reagan's No. 4 Jackson, SW SW SE Sec. 5-32n-6w. R.U.R.

Petroleum County

H. Clark Rowland's No. 1 Brundige-Mink, NE SE NW Sec. 35-14n-25e. T.D. 722 ft.; 8⅝-in. on bttm.; prep. to res.
Watson Oil Co.'s No. 1 Austed, SW NW SE Sec. 22-13n-28e. T.D. 1,540 ft.; U.R. 10-in. to bttm.

Pondera County

Ted Hawley's No. 3 State, NW SE SE Sec. 16-27n-4w. Drlg. 1,400 ft.

Toole County

A completion in the Kevin pool in the Kevin-Sunburst field which reminded operators of earlier days was the Big West Oil Co.'s No. 2 Ellingson, CWL SE SW Section 14-35n-3w, which barely cracked the cap rock at the contact at 1,720 ft. when it sent the oil over the top of the derrick. It flowed, estimated, 50 bbl. an hour before the valve could be closed. After connecting up the flow lines it gaged 30 bbl. an hour and then was pinched in and made 100 bbl. per day through ¼-in. choke. The 6⅝-in. was set at 1,636 ft.

The Rimrock Oil Co.'s No. 5 Schmidt, SW SE NW Section 29-35n-3w, which showed for 15 bbl. per day, naturally, from a break in the lime at 1,789 ft., total depth, was acidized with 500 gal., and is pumping 100 bbl. per day. Contact was at 1,785 ft.

Frazer & Smith's No. 2 Van Note, NE SW NW Section 30-35n-2w, was completed for 15 bbl. per day, naturally, at 1,542 ft., total depth, from the contact at 1,500-30 ft.

G. H. Lund's No. 1 Dahlen, C SE NW Section 35-35n-4w, on the extreme west side, was plugged and abandoned at 2,197 ft. It was recently deepened from 1,980 ft. and picked up more water which could not be shut off with squeeze job.

The G. & A. Oil Co.'s No. 14 Goeddertz, C SW NE Section 16-35n-3w, is another good completion which pumped 50 bbl. per day, naturally, from the contact at 1,798-1,800 ft.

A. E. Crumley & Son's No. 19 Fryberger, NE NW SE Sec. 24-35n-3w. Drlg. 310 ft.; (first report).
Wm. Hanlon et al's No. 1 Merton Mortgage, C SW SE Sec. 6-37n-1w. R.U.C.T.
Coolidge & Coolidge's No. 6-A State, SW NW NW Sec. 36-36n-2w. Drlg. 520 ft.
O. A. Nepstad's No. 1 Hugi, NW SW NW Sec. 11-35n-3w. R.U.
G. & A. Oil Co.'s No. 15 Goeddertz, CEL NE SW Sec. 23-35n-3w. Drlg. 520 ft.
Adams-Hessla's No. 6 McManus, C SE SE Sec. 21-35n-2w. Loc.
Henry Vander Pas' No. 4 Cedar Creek, CWL SW SE Sec. 31-35n-1w. Drlg. 960 ft.
Coolidge & Coolidge's No. 8 Shaw, NW NE NE Sec. 35-36n-2w. T.D. 1,558 ft.; Sunburst 1,530-58 ft.; 200 ft. O.I.H.; shot with 30 qt.; rng. rods and tbg.
S. V. Day's No. 1 Halter, C NE SE Sec. 17-35n-2w. Drlg. 580 ft.
Fulton Pet. Co.'s No. 4 Thompson, CNL SW NE Sec. 28-35n-3w. Drlg. 1,704 ft.
Prevol & Shay's No. 6 Govt., NE NW SW Sec. 11-35n-3w. R.O.G.
Crumley & Son's No. 18 Fryberger, CEL SE SW Sec. 24-35n-3w. T.D. 1,579 ft.; contact 1,565-79 ft.; acd. 1,000 gal.; tstg.
R. G. Farrant's No. 1 Holbrook, C NW NE Sec. 2-36n-3w. T.D. 1,400 ft.; cmtd. 7-in.
Casper T. Olen's No. 9 Engemoen, NW NE NW Sec. 14-35n-2w. S.D. 70 ft.

Yellowstone County

Calitana Oil Co.'s No. 1 Stallinberger, NE NE SW Sec. 18-3n-23e. T.D. 5,129 ft.; cmtd. 7-in. at 4,997 ft.; drlg. plug to test; (formerly Broadview Dome Oil Co.).
Riverton Oil Co.'s No. 1 Fox, CEL NW NE Sec. 14-2n-23e. T.D. 2,150 ft.; C.O. at 1,920 ft. to res.

UTAH

Daggett County

Mountain Fuel Supply Co.'s No. 1 Govt., SE NE NE Sec. 19-3n-24e. Drlg. 1,827 ft.

Grand County

Reeder Corp.'s No. 1 State, NE NE NE Sec. 16-22s-19e. Drlg. 1,060 ft.

Summit County

Longwell Pet. Co.'s No. 1, SE SW SE Sec. 35-3n-5e. T.D. 3,274 ft.; tstg. S.O. in sd. at 3,256-74 ft.

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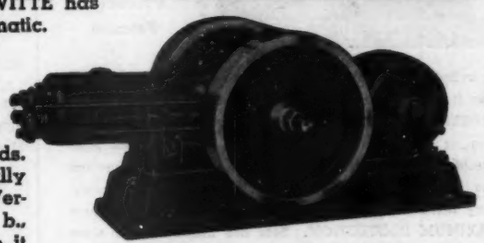

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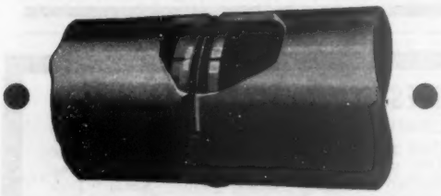

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SOUTH DAKOTA

Butte County

Two Top O. & G. Co.'s No. 2, SE NE Sec. 30-10n-6e. T.D. 2,725 ft.; rng. Schimb. test; Muddy at 2,550-75 ft.; had. S.O.&G.

Illinois Fields

(Continued from Page 95)

In Crawford County Fuller and others' No. 1 Barnes, NW NE SW Section 7-5n-11w, was spudded. Canadian Oil Co.'s No. 1 Goff, C E½ NW SE Section 16-5n-12w, drilling at 1,600 ft. Robinson's No. 1 Walters, SE NW SE Section 19-7n-12w, McClosky lime top at 1,487 ft., drilling at 1,700 ft.; had an odor of oil in the top of the McClosky. Dorning & Lesser have derrick up for No. 1 Ducommun, C N½ NW NW Section 31-6n-12w. La Salle Drilling Co.'s No. 1 Berryhill, NE NE NW Section 9-6n-13w, total depth 2,976½ ft., plugged back to 2,805 ft. and testing. Same company's No. 1 Wall, in Section 9-6n-13w, was shut down at 1,903 ft.

In Fayette County Barr's No. 1 Dammerman, NW cor. SW Section 18-8n-4e, total depth 1,495 ft., trying to shut off water. Turner's No. 1 Hoagland, NW NW SW Section 14-9n-4e, total depth 1,782 ft., fishing for underreamer lugs.

In Lawrence County Walter Payne's No. 1 Monjar, SW NE NW Section 28-4n-11w, was drilling at 1,600 ft., Cypress sand was penetrated at 1,490-1,577 ft. Harlan Kays had material on the ground for No. 1 Griggs, SW cor. NW SE Section 12-3n-13w. Bell Brothers' No. 1 Wampler, SE SE NE Section 27-5n-11w, drilling at 2,800 ft.

In Clinton County Trumbull and others' No. 1 Ackman, SE SW SE Section 22-2n-3w, drilling at 1,790 ft. McClosky lime was topped at 1,370 ft. Snell & Goldschmidt's No. 1 Schaefer, SW NE NW Section 33-2n-3w, drilling at 2,220 ft. Tatum's No. 1 Voss, C SW NE Section 15-2n-4w, drilling at 820 ft. Trumbull and others' No. 1 Peters, SW cor. SE SE Section 33-2n-4w, shut down at 2,600 ft. Trumbull's No. 1 Dillman estate, NE SE NE Section 12-2n-5w, drilling at 952 ft.

In Adams County H. Schuster's No. 1 fee, NW SE SW Section 25-2n-6w of fourth principal meridian, drilling at 35 ft.

In Alexander County Arnold & Middleton's No. 1 Hodges, SE SE NW Section 35-15s-2w, was drilling at 755 ft.

In Williamson County Carterville Oil & Gas Co.'s No. 1 Lawrence Cannon, NW SE SW Section 1-10s-1e, was shut down for orders at 2,030 ft. Ste. Genevieve lime was topped at about 1.890 ft.

In Jackson County Barton and Shipman's No. 1 Hall, NW NW SW Section 8-9s-1w, was drilling at 1,230 ft. Waltersburg sand was topped at 1,165 ft. White's No. 1 Dean, NE NW NW Section 18-9s-3w, topped Salem lime at 1,045 ft. and had a fishing job at 1,160 ft. A small showing of gas appeared at 960-90 ft., just above the St. Louis lime. M. C. Trumbull's No. 1 H. Bennett, CSL S½ S½ SE Section 35-8s-5w, shut down at 2,893 ft. Trans State Oil Co.'s No. 1 Burroughs, SW SE SW Section 6-7s-1w, total depth estimated at 1,600 ft., trying to shut off water from Benoist sand.

In White County Kingwood Oil Co.'s No. 1 Martin, NW SW NE Section 13-7s-8e, total depth 5,225 ft. Devonian lime topped at 4,888 ft. and Dutch Creek lime at 5,204 ft., set 7-in. casing at 3,060 ft.; waiting for cement to set.

In White County Jarvis Brothers' No. 1 Coale, SW SE SW Section 28-3s-9e, drilling at 3,114 ft.

In Edwards County Barnes & Wickwire's No. 1 Broster, NE cor. Section 3-3s-14w, drilling at 2,042 ft.

In Jefferson County Rodger C. Young's No. 1 Whittington, SE SE SW Section 30-4s-3e, was drilling at 2,397 ft.

National Chemical Exposition At Chicago in December

The National Chemical Exposition, sponsored by the Chicago section of the American Chemical Society, will be held December 11 to 15 at the Stevens Hotel. Eight states and the District of Columbia are represented on the advisory committee. Among the members are: Bruce K. Brown, manager research and development, Standard Oil Co. of Indiana; Gustav Egloff, director of research, Universal Oil Products Co.; Otto Eisenschiml, Chicago, president, Scientific Oil Co., Inc.; Thomas Midgley, Jr., vice president, Ethyl Gasoline Corp.; C. R. Wagner, chief chemist, Pure Oil Co.; E. R. Weidlein, director of Mellon Institute; Frank C. Whitmore, dean of the school of chemistry and physics, Pennsylvania State College; E. C. Williams, Emeryville, Calif., director of research, Shell Development Co.

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Kansas Developments

By
DAL DALRYMPLE

Fifth Pay Zone Uncovered in Hall Pool of Russell County

The Hall pool in Russell County, Kansas, was given its fifth producing horizon when R. H. Shields and associates found oil in Howard lime pay at their No. 4 Geise, CNL NW NE Section 28-14-13w. The lime was topped at 2,325 ft. and barely penetrated when oil started rising in the hole. On a preliminary 4-hour test it was reported to have earned potential rating of 2,294 bbl. Gravity of the oil was 38°. It offsets Lansing lime production. Other producing formations in the field are the pre-Cambrian, Gorham and Arbuckle zones.

The Stratman pool in Ellsworth County was extended ¼ mile northwestward at Pryor & Lockhart and Stodder & Dutton's No. 1 Stratman, CWL NW NW Section 1-17-10w. Potential was calculated at 3,000 bbl., with production from Arbuckle lime at 3,297 ft. It may prove the connecting link for the Stratman pool and Ehler pool more than ½ mile northwestward of the extension. Indications are that the Stratman, Ehler and Stoltenberg pools may prove to be a common producing area with further development.

A ⅝-mile extension to the northwest was indicated for the Snider pool in Stafford County at Champlin Refining Co.'s No. 1 Snider, CNL NW NW Section 3-21-11w. It topped Simpson sand at 3,367 ft., was bottomed at 3,375 ft., and had saturation in cores with a little free oil. Casing was being run for completion test.

Prospects for a second producer in the Kaths pool appeared good at F. J. Kasper, trustee's No. 1 Kaths, NW Section 33-13-22, Johnson County. This operator opened the area several months ago with a gas well at No. 1 Kaths. The No. 2 well based Hertha lime at 304 ft., with elevation of 930 ft. It is checking about even with the discovery well. The operator plans to test Bartlesville sand if the formations continue to check favorably.

Several new wildcats were reported the past week. Nadel & Gussman and others' No. 1 Mudd, CWL NW NE Section 16-15-15w, is a new Russell County test about 1 mile southwest of the Donovan pool. Finston and others' No. 1 Siemsen, C W½ NW SE Section 3-17-10w, outpost 1½ miles west of the Ehler pool, Ellsworth County, has started work. Bay Petroleum Co. has dug cellar and pits at No. 1 Coons, CWL SW SW Section 13-19-1w, wildcat in McPherson County. Champlin Refining Co.'s No. 1 Kasselman, CNL SE NW Section 22-20-11w, is a Barton County outpost 1 mile west of the Silica pool. W. N. Bartlett and others staked location for No. 1 Hulme, CEL SE SW Section 9-20-12w, about 3 miles west of the Ellinwood area, Barton County. Magnolia Petroleum Co.'s No. 1 Smith, NE cor. Section 12-21-16w, is location for a Pawnee County wildcat 4 miles south of the Pawnee Rock pool.

Wildcat Casualties

Earl Wakefield and Carter Oil Co.'s No. 1-A Dunn estate, C W½ SE NW Section 3-35-5e, wildcat in Cowley County, topped Mississippi lime at 3,070 ft., had a small showing of oil at 3,090-3,100 ft., and was dry and abandoned at 3,123 ft.

E. T. Lindsay and Bells-Wells Oil Co.'s No. 1 Leblanc, C W½ SW NW Section 35-6s-1w, wildcat on a Carter Oil Co. farmout in Cloud County, had Hunton lime at 2,785 ft., Maquoketa shale 3,005 ft., Viola lime 3,090 ft., Simpson zone 3,325 ft., Arbuckle lime 3,375-3,407 ft., total depth, and was dry and abandoned.

Wamhoff & Lebsack's No. 1 Maduska, C SE NE Section 36-8s-20, wildcat in Leavenworth County, Kansas sector of the Forest City basin, had a small showing of asphalt in Mississippi lime at 1,497-1,505 ft., total depth, and was dry and abandoned. It had a hole full of water and showing of gas in top of a sand at 1,368-87 ft.

F. G. Holl and others' No. 1 Wilkens, NW NW NE Section 28-18-6w, Rice County wildcat, found Mississippi lime at 3,447 ft., was bottomed at 3,514 ft., efforts to develop production by shooting and acidizing were unsuccessful and it was dry and abandoned.

Derby Oil Co. and Comanche Oil Co.'s No. 1 Monroe, CWL NW SE Section 26-18-9w, wildcat in Rice County, had a slight showing of oil and a sulfur odor in Arbuckle lime at 3,323-30 ft., total depth, and was dry and abandoned.

J. N. Kaufman's No. 1 Hayes, CNL NE NE Section 25-21-7w, Rice County wildcat, was dry and abandoned in Mississippi lime at 3,492-3,501 ft., total depth.

Westgate-Greenland Oil Co.'s No. 1 Schlickau, C W½ SE SW Section 8-25-4w, wildcat in Reno County, topped Mississippi lime at 3,512 ft., the hole filled with water at 3,579 ft., and it was abandoned at 3,613 ft.

C. L. Carlock and others' No. 1 Starkey, SE SE Section 21-30-7, Cowley County wildcat, found Arbuckle lime at 3,180 ft., had a hole full of water at 3,188-94 ft., total depth, and was abandoned.

Estimated Daily Production

Estimated daily production for Kansas for the week ended May 18, and for the preceding week was as follows:

	Barrels	
	May 18	May 11
Oxford City	700	700
Burrton	8,050	7,950
Ritz-Canton	3,650	3,600
Graber	2,850	2,200
Hollow-Nikkel	1,450	1,400
Lerado	850	650
Voshell	1,550	1,500
Wellington	1,750	1,650
Ellsworth County:		
Lorraine	1,750	1,500
Other pools	2,320	1,975
Rice-Barton counties:		
Bloomer	3,850	2,750
Chase	4,050	3,450
Geneseo	2,800	2,650
Raymond	400	400
Silica	12,550	8,750
Keesling	700	650
Wherry	2,550	3,700
Miscellaneous Rice	920	1,220
Miscellaneous Barton	7,945	7,025
Trapp district	13,150	9,850
Balance Russell County	17,450	15,700
Sedgwick County	3,300	3,250
Ellis County:		
Bemis	6,700	6,050
Miscellaneous	7,475	6,900
Kingman County	555	690
Stafford County	7,780	6,800
Greenwood County	7,750	7,800
Eldorado	7,250	7,200
Other fields	33,105	28,090
Total Kansas	165,200	149,350

Russell County

Skelly Oil Co.'s No. 10 Rein, NW SE Section 10-15-13w, Coralena pool, Russell County, was completed for potential of 891 bbl. of oil daily in Lansing lime at 3,024-27½ ft., total depth. It was acidized.

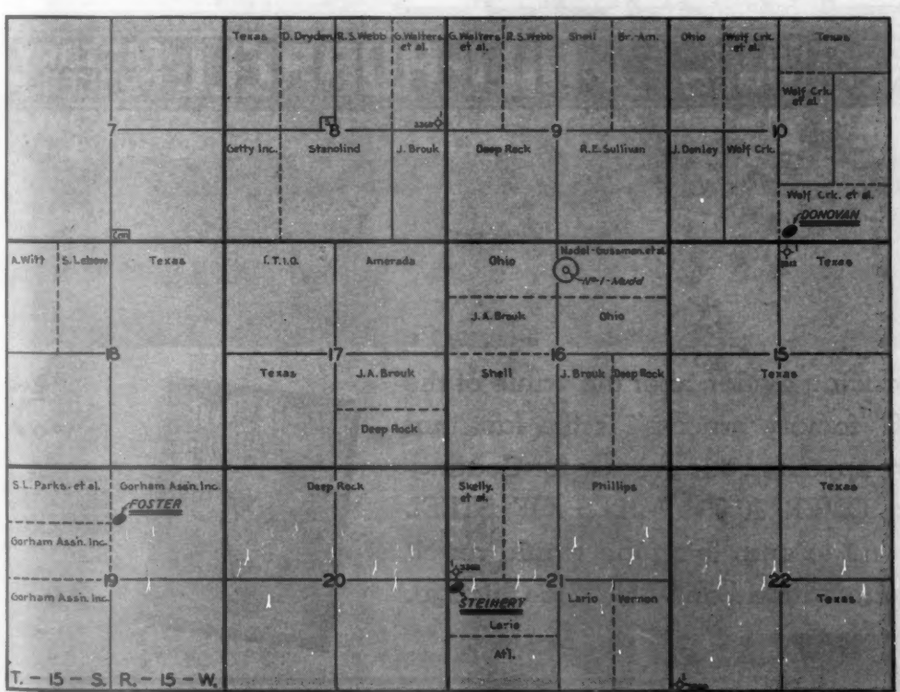
Same company's No. 2 Rein, CSL SW Section 25-14-14w, Gurney pool, was bottomed at 2,985 ft. in Lansing lime, acidized and made 24-hour potential of 1,494 bbl. of oil.

Stanolind Oil & Gas Co.'s No. 5 Krug, CWL NW SE Section 27-14-14w, was acidized and completed for daily potential of 1,630 bbl. of oil, producing from Lansing lime at total depth of 3,045 ft.

Skelly Oil Co.'s No. 13 Neidens, C N½ S½ SE Section 32-15-13w, Trapp field, had calculated potential and was completed for top allowable of 3,000 bbl. of oil daily after acidization. It was bottomed at 3,323 ft. in Arbuckle lime.

Shell Oil Co.'s No. 10 Dumler, NW SW Section 36-15-14w, Trapp field, made top allowable potential of 3,000 bbl. of oil daily at total depth of 3,321 ft.

Wolf Creek Oil Co.'s No. 3-A Rouback, NW Section 10-14-15w, Sullivan-Gorham area, was completed for



Midcontinent Map Co., Wichita

Nadel & Gussman and Irwin Drilling Co. have started work at No. 1 Mudd, C W½ NW NE Section 16-15-15w, wildcat in southwestern Russell County in an area in which the one-well Donovan, Foster and Steinert pools were discovered. Lansing and Arbuckle lime production will be sought. Location is on a subsurface structure worked by Kent R. Kimball, Tulsa geologist

3,000 bbl. of oil daily after potential was calculated. Total depth was 3,246 ft. in Arbuckle lime.

Mid-Continent Petroleum Corp.'s No. 2 Rogg, C S½ NW NE Section 32-14-13w, Hall pool, recently was completed for potential of 1,612 bbl. of oil daily at total depth of 2,887 ft.

Gulf Oil Corp.'s No. 2 Rein, C S½ SE NE Section 8-15-13w, Trapp field, was bottomed at 3,343 ft. in Arbuckle lime and completed for 15 bbl. of oil daily.

New activity in Russell County: W. I. Southern, Inc.'s No. 1-A Hilderliter, C W½ NW SW Section 28-15-13w, rigging up rotary; Coralena Oil Co.'s No. 4 Cora, C E½ SE NE Section 29-15-13w, rigging rotary; Skelly Oil Co.'s No. 14 Neidens, C E½ E½ SE Section 32-15-13w, rigging up rotary; Mid-Continent Petroleum Corp.'s No. 4 Ochs, SE SE NE Section 35-15-14w, rigging rotary; Shell Oil Co., Inc.'s No. 3-A Batt, SE NE SE Section 35-15-14w, cellar; Coralena Oil Co.'s No. 11 Dumler, SW SW NW Section 36-15-14w, drilling below 663 ft.

Barton County

Indian Territory Illuminating Oil Co.'s No. 6-A Schrepel, C N½ NW NE Section 26-20-11w, Silica field, Barton County, was acidized, potential was calculated and it was completed for top allowable of 3,000 bbl. of oil daily at total depth of 3,264 ft. in Arbuckle lime.

Shell Oil Co.'s No. 3 Luerman, SW Section 18-16-13w, Trapp field, made daily potential of 721 bbl. of oil at total depth of 3,368 ft. in Arbuckle lime.

Same company's No. 2 Kowalsky, SE Section 18-20-11w, Clawson area, was bottomed at 3,291 ft. in Arbuckle lime and swabbed 86 bbl. of oil in 24 hours.

Stanolind Oil & Gas Co.'s No. 6-B Jutting, NW Section 15-20-11w, Silica field, was completed for daily potential of 342 bbl. of oil from Arbuckle lime at total depth of 3,312 ft.

Barnsdall Oil Co.'s No. 4 Rous, C E½ NW SW Section 28-16-11w, Prusa area, was dry and abandoned at 3,388 ft., total depth.

Hannum Drilling Co.'s No. 1 Dirks, C SW Section 18-18-15w, Otis field, was bottomed at 3,515 ft. and completed for 48,000,000 cu. ft. of gas daily.

Ohio Oil Co.'s No. 1 Brack, C N½ N½ NW Section 21-18-15w, gaged 19,000,000 cu. ft. of gas at total depth of 3,514 ft., completed.

First reports of new work in Barton County: Champlin Refining Co.'s No. 1 Kasselman, C E½ SE NW Section 22-20-11w, location; Stanolind Oil & Gas Co.'s No. 14 Schartz, C SW Section 2-20-11w, location; same company's No. 1 Esfield, C S½ SE NE Section 28-16-11w, rigging rotary; Derby Oil Co.'s No. 1-A State, NW NE SE Section 36-19-12w, location; Cities Service Oil Co.'s No. 3 Bauman, C E½ E½ SW Section 6-16-13w, set casing and waiting on cement at 350 ft.; Texas Co.'s No. 8 Hoffman, C N½ SW NW Section 6-16-13w, location.

Ellis County

Lario Oil & Gas Co.'s No. 3 Cress, SE Section 13-11-17w, Bemis field, Ellis County, had potential calculated after acidization and was completed for top allowable of 3,000 bbl. of oil daily at total depth of 3,394 ft. in Arbuckle lime.

Darby Petroleum Corp.'s No. 6 Henderson, CNL SW NE Section 7-11-17w, Burnett pool, made daily potential of 3,000 bbl. of oil daily after acid treatment, producing from Arbuckle lime at total depth of 3,397 ft.

Dickey Oil Co.'s No. 2-B Henderson, CWL SW SW Section 6-11-17w, Burnett pool, had Arbuckle lime at 3,426-90 ft., total depth, and produced 203 bbl. of oil in 24 hours.

Skelly Oil Co.'s No. 5 Kempe, CSL SW NE Section 12-11-18w, Burnett pool, was completed for 3,000 bbl. daily, top allowable, at total depth of 3,394 ft. in Arbuckle lime.

J. C. Shaffer, Inc.'s No. 1 Oswald, CWL SE SE Section 11-12-16w, Blue Hill pool, was treated with acid and made daily potential of 851 bbl. of oil from Topeka lime at total depth of 2,810 ft.

Lario Oil & Gas Co.'s No. 2 Pearl, C W½ SE SE Section 13-11-17w, Bemis field, was completed for top allowable potential of 3,000 bbl. of oil daily at total depth of 3,396 ft. in Arbuckle lime.

Cities Service Oil Co.'s No. 13 Collahan, C E½ NW NE Section 24-11-17w, was building rotary rig. Bay Petroleum Corp.'s No. 3-B Ridler, C W½ SW SE Section 1-11-18w, was a cellar. Central Petroleum Co.'s No. 1 Marshall, C N½ NW NW Section 24-11-18w, was rigging up rotary.

Ellsworth County

Skelly Oil Co.'s No. 7 Link, SE SW Section 32-17-10w,

(Continued on Page 132)

Forest City Basin

ST. JOSEPH, Mo., May 20.—The Nebraska sector of the Forest City basin maintains major interest of operators in the four-state area, but other districts were not without developments with the summer drilling campaign apparently getting under way at last.

Pawnee Royalty Co. continued to let its No. 1 Bucholz, C NW SW Section 17-1n-16e, second producer in the Falls City field, Richardson County, Nebraska, flow into the tanks at the rate of 330 bbl. of oil daily, and operators turned their attention anew to the discovery well, No. 1 Boice, C NE NE Section 18-1n-16e. It was plugged back from Arbuckle lime and cemented in Hunton lime, formation in which it originally was completed as an oil well. Water was reported shut off and the hole was being cleaned out and it may be reacidized. Last December 31 the Boice was treated with 2,000 gal. and responded by flowing and pumping approximately 100 bbl. of oil and 300 bbl. of water daily.

Phillips Petroleum Co. dropped the 80-acre Schulenberg lease in S½ SW Section 33-1n-16e, about 3 miles southeast of No. 1 Bucholz, and was reported to have dropped other leases across the state line in Brown County, Kans. The company has shot the district, which other operators have considered as preferred area. A scramble for the released acreage resulted.

In the Kansas sector Young & McLaughlin's well in C NW SW Section 4-10-20, was acidized with 1,000 gal. after packer was set at 1,475 ft. in Mississippi lime, where there had been some good showings of oil. The acid ate around the packer and there was no increase in oil. The crew was drilling below 1,564 ft. A Leavenworth County wildcat was abandoned.

(Continued on Page 119)

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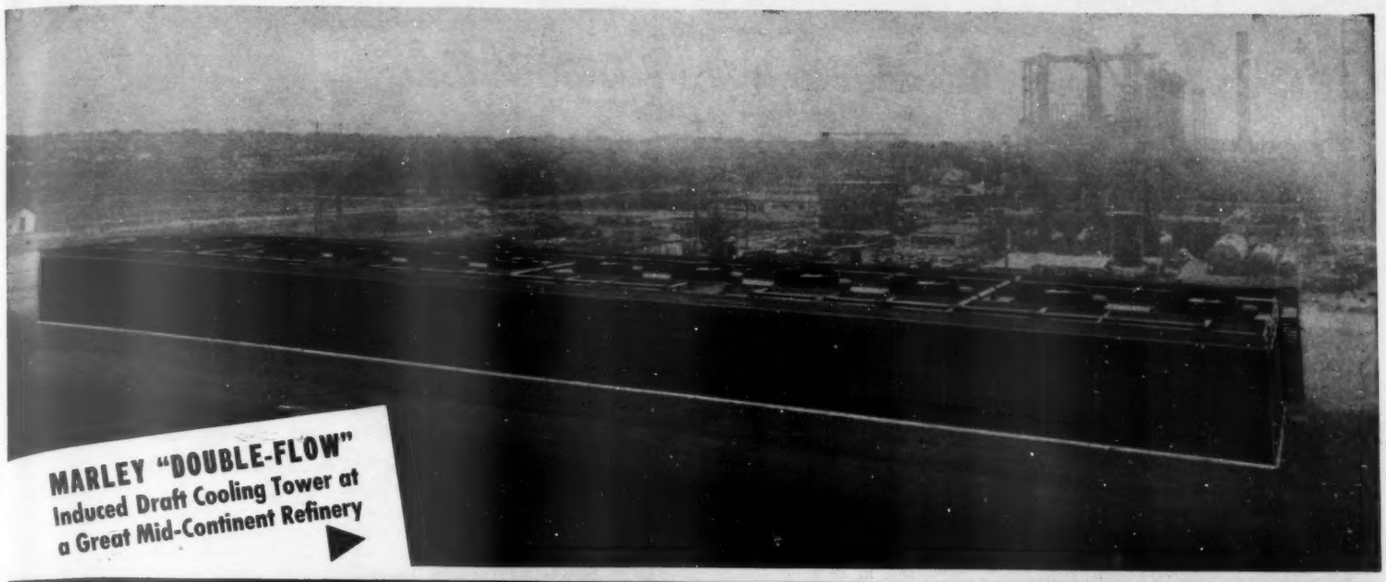

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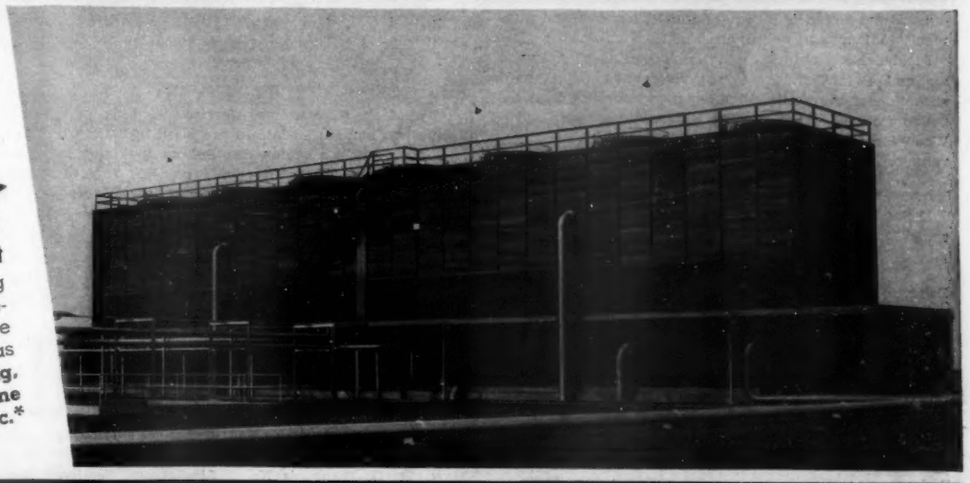

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North Louisiana, Arkansas

By GEORGE WEBER

4 Completions Extend Olla, La., Field in Three Directions

SHREVEPORT, La., May 20—Four oil-well completions extended the Olla field of La Salle Parish one location to the north, south and southwest during the week as activity increased in the new field. Wildcats in widely separated sections of the tristate district attracted interest, without, however, any important findings.

Olla Completions

Following difficulty in obtaining pipe-line oil in tests of the Tertiary Wilcox sand at Olla, operators brought in four wells during the past week, with water production ranging from 1 per cent to 25 per cent. The production, from sands lower in the Tertiary Wilcox than have previously been found productive in other Wilcox fields, occurs in some cases. Eleven wells are drilling in the field, and continued success in bringing in producers and extending the field may be expected to result in increased operations.

Field drilling elsewhere in North Louisiana, Arkansas and East Texas remained very quiet, with the exception of the shallow drilling being pursued in the Caddo field of Caddo Parish, where chalk rock and Woodbine sand tests are being drilled in considerable volume.

Production by Pool

Estimated daily gross production all companies week ended May 18:

NORTH LOUISIANA

	Barrels
Bellevue	470
Caddo light	5,135
Caddo heavy	2,105
Converse	550
Cotton Valley	*15,530
Cross Lake	5,035
De Soto and Red River	990
Elm Grove	260
Haynesville	2,790
Holly	65
Homer	2,885
Lisbon	4,565
Olla	1,280
Pleasant Hill	95
Rodessa	20,805
Sarepta-Carterville	†370
Sligo	2,395
Sugar Creek	740
Urania	2,855
Zwolle	1,890
Total Louisiana	70,810

SOUTH ARKANSAS

Atlanta	1,900
Big Creek	70
Buckner	2,550
Champagnolle	1,165
Dorcheat	1,140
El Dorado	1,680
Lewisville	820
Lisbon	245
Magnolia	20,000
Miller County	280
Nevada	560
Nick Springs	510
Rodessa	2,260
Schuler	18,700
Smackover light	1,780
Smackover heavy	13,950
Stephens	535
Troy	1,265
Urbana	930
Village	1,195
Total South Arkansas	71,525
Rodessa Texas	18,425 bbl.

*4,365 bbl. is distillate.
†90 bbl. is distillate.

Wildcats

The deep Haynesville test of Ohio Oil Co. in Claiborne Parish, North Louisiana's most important current wildcat, was drilling in anhydrite below 4,300 ft. at the week end. The test is headed for the lower Marine or Cotton Valley formation in search of production comparable to the oil and gas-condensate production in Cotton Valley.

In Caddo Parish J. M. Conner's, or L. I. Davis' No. 1 Williams, a wildcat 2½ miles south of Keithville and near a deep gas-condensate well, is coring below 5,100 ft. on a 10,000-acre block.

South Arkansas

Standard Oil Co. of Louisiana's No. 1 Sturgis, Miller County deep wildcat, was still in the Buckner formation at latest report coring below 9,107 ft. The top of the Smackover formation was erroneously picked last week at 8,965 ft., but further coring showed the well to be still in Buckner. The possibilities of finding porous saturated oolitic lime in the Reynolds member at the top of the Smackover formation will make this well one of the most closely watched in the state during the next few days.

In Lafayette County another important deep test is approaching critical depth. Atlantic Refining Co.'s No. 1 Bodcaw in Section 29-17-23 is drilling below 8,190 ft. It is near the Columbia County line southeast of Stamps.

East Texas Wildcat

Another deep wildcat for Harrison County near Hallsville was announced late in the week by Fohs Oil Co., which recently abandoned a Paluxy lime test in the same general area. The new test, No. 1 M. J. Hall, is located about 5½ miles north of No. 1 Sypert, recently abandoned, and 3 miles north of Hallsville.

NORTH LOUISIANA COMPLETIONS

Bistineau—Bienville Parish

Arkansas Louisiana Gas Co.'s No. 1-A Carter, Section 12-16-10, 56,480,000 cu. ft. of gas, rock pressure 2,110 lb. through perforated casing at 5,060-5,168 ft., acidized with 6,000 gal., total depth 6,275 ft.

Caddo—Caddo Parish

L. M. Calhoun, Jr., trustee's No. 1 Caddo Oil & Mineral Co., Section 12-20-16, pumping 75 bbl., total depth 1,530 ft. D. L. Johnson's No. 1 Singleterry, Section 10-20-16, pumping 5 bbl. oil and 25 bbl. salt water, total depth 1,614 ft., plugged back to 1,570 ft. Stanolind Oil & Gas Co.'s No. 132 Dillon, Section 13-21-15, pumping 50 bbl. oil and 12 bbl. of salt water, total depth 1,680 ft. J. G. Strahan's No. 2-B Stiles, Section 32-21-16, estimated 1,000,000 cu. ft. of gas and a light spray of oil, total depth 2,380 ft. L. L. Sugar's No. 6 Hart, Section 22-21-16, pumping 15 bbl., total depth 1,030 ft.

Urania—Grant Parish

J. E. Granstaff's No. 2 Morrison, Section 10-9n-1e, pumping 20 bbl., total depth 1,535 ft.

Monroe—Union Parish

Memphis Natural Gas Co.'s No. 4 Frost Lumber Industry, Section 14-22-3, 1,000,000 cu. ft. of gas, rock pressure 1,010 lb., total depth 2,202 ft.

Olla—La Salle Parish

Arkansas Fuel Oil Co.'s No. 1-A Goodpine, C SW SW Section 7-20-3e, 192 bbl., ¼-in. choke, 10 per cent sediment, tubing pressure 60 lb., casing pressure 150 lb., perforated casing at 2,236-40 ft., total depth 2,247 ft. Atlantic Refining Co.'s No. 2-A Goodpine, 75 ft. north of C SW NE Section 28-9-2e, dry and abandoned at 4,000 ft. Placid Oil Co.'s No. 3 Goodpine, C SE SE Section 12-10-2e, 256 bbl., ¼-in. choke, 1 per cent sediment and water, tubing pressure 125 lb., casing pressure 175 lb., perforations at 2,242-47 ft., total depth 2,250 ft. Placid Oil Co.'s No. 12 Louisiana Central, C NE SE Section 13-10-2, 216 bbl., 7/32-in. choke, 2 per cent sediment and water, tubing pressure 285 lb., casing pressure 600 lb., perforations at 2,232-38 ft., total depth 2,240 ft. Placid Oil Co.'s No. 13 Louisiana Central, C SW NE Section 13-10-2, 300 bbl., 19/64-in. choke, 25 per cent sediment and water, tubing pressure 50 lb., casing pressure 100 lb., perforated 2,252-56 ft., total depth 2,419 ft.

Zwolle—Sabine Parish

A. R. Chestnut's No. 1 Logan, 330 ft. SW cor., NW NW Section 26-10-13, salt water and abandoned, total depth 1,970 ft. Odell Henson's No. 1 Frost Lumber Industry, SE SE Section 22-9-13, pumping 6 bbl. oil and 100 bbl. salt water, total depth 3,228 ft.

EAST TEXAS BORDER COMPLETIONS

Smithland—Marion County

H. H. Groneman's No. 1 Tom Brooks, 255 ft. south, 427 ft. west of NE cor. Gaines Coore Survey, dry and abandoned at 2,280 ft., set 5½-in. casing 2,280 ft.

ARKANSAS COMPLETIONS

Atlanta—Columbia County

Joe K. Mahoney's No. 3 Emma Riley, C SW SE Sec. 11-18-19, 264 bbl., 11/64-in. choke, casing and tubing pressure 1,800 lb., total depth 8,225 ft., set 6-in. casing 8,225 ft., perforated 8,170-76 ft.

Magnolia—Columbia County

Placid Oil Co.'s No. 1 Ezra Garner, 330 ft. south of NE cor. Section 25-17-20, 432 bbl., 11/64-in. choke, casing pressure 1,300 lb., tubing pressure 1,250 lb., total depth 7,558 ft., set 5½-in. casing 7,540 ft.

Indiana Fields

(Continued from Page 95)

In Randolph County Godwin and others' No. 1 St. John, C NE NE Section 8-21n-12e, was shot with 60 qt. at 1,359-69 ft., and was being made ready for pumping. John M. Seip acidized No. 1 Johnson, SW cor. NW NE NW Section 9-19n-13e, in Trenton lime at 1,005-71 ft., total depth, and it was to be put on the pump.

In Madison County W. R. Anderson's No. 1 Coy, NE NE SW Section 1-19n-6e, was dry and abandoned at 1,541 ft.

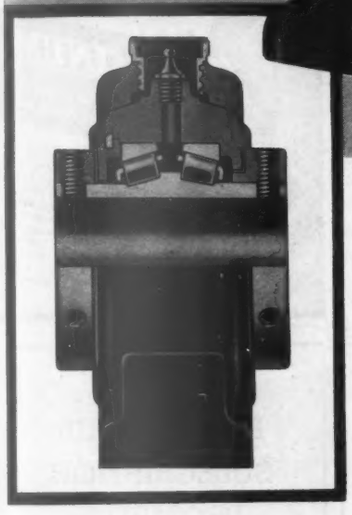
In Vigo County E. J. Renwaldt's No. 1 Hartman, SW NE NE Section 13-11n-9w, topped Mississippi lime at 770 ft. and drilled to 1,710 ft. where it was abandoned as dry.

In Owen County Urban Oil Co.'s No. 1 Everhardt, C S½ NE SE Section 21-9n-5w, an old well deepened from 1,627 ft., topped Trenton lime at 2,474 ft. It had showings of oil at 2,508 ft., 2,515 ft., and 2,525 ft., but was dry at 2,578 ft.

In Dubois County Beyers, Borden and others' No. 1 Schultz, C N½ SE NE Section 5-2s-3w, was dry and abandoned at 570 ft. Ste. Genevieve lime was topped at 450 ft., a small show of oil at 530-33 ft. was followed by water at 561-70 ft.

In Spencer County Kentucky Natural Gas Co.'s No. 1 Parsley, NW SE NE Section 31-7s-6w, had sand at 915 ft., with a showing of oil; water at 917 ft., total depth 927 ft. The hole filled up 660 ft. in 36 hours, 110 ft. of which was oil and 550 ft. was water. It was abandoned. Snell and others' No. 1 Crowder, NW cor. SW NW Section 7-7s-7w, is estimated good for 25 bbl. from sand at 1,022-32 ft. It was completed. L. M. Steele and others' No. 1 Frank, NW NW SE Section 30-7s-6w, was completed as a 4,257,000-cu. ft. gas well in sand at 895-908 ft.

In Warrick County S. R. Travis' No. 1 Moyer, NW SW NW Section 13-5s-9w, was a hole full of water at 1,910 ft., total depth, and was shut down for orders. Ste. Genevieve lime was topped at 1,813 ft.; Rosiclare at 1,840 ft.



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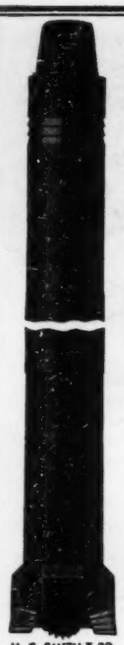

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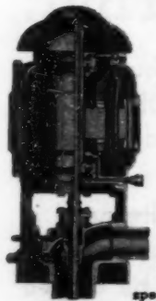

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Among the Drilling

E. R. OWENS, of Jackson, Miss., has contracted to drill a 5,000-ft. Hinds County, Mississippi, wildcat for Robinson & Frame, with work beginning shortly.

RED IRON Drilling Co. has spudded the Sells Petroleum Co.'s No. 1 Faulkner, located 6 miles south of Sartartia in Yazoo County, Mississippi. Another Red Iron rig is drilling G. C. Grasty's No. 1 Kentucky Lumber Co. in Itawamba County, Northeast Mississippi, in the Northwest Alabama basin area. Red Iron is drilling No. 1 Philyaw, its own test, in Miller County, Arkansas, near the Standard Oil Co. of Louisiana's deep test at Fouke.

PRINCE BROTHERS of Electra, Tex., are drilling A. H. Rowan's No. 1 Eakin, a Holmes County, Mississippi, wildcat.

G. H. VAUGHN, of Dallas, Tex., will drill a second Harrison County, Mississippi, wildcat for Fohs Oil Co. The No. 1 Hall will be drilled about 5 miles north of No. 1 Sypert, recently abandoned with no show in the Paluxy. The tests are located in the Hallsville area.

RUTHERFORD Drilling Co. is attempting to extend production in the Fairbanks field, Harris County, Texas, as a production test is being made on Kirby Petroleum Co.'s No. 1 Harbaugh. Casing was cemented after oil and gas sands were cored at intervals from 6,789-6,830 ft.

CHRISTIAN-CARPENTER Drilling Co. abandoned Joyce Richardson's No. 1 Marks, a wildcat in the Ogburn area, Harris County, Texas, and the rig has been moved to the Cypress area in the same county for the company's No. 1 Anderson. In the Ogburn area, drilling was started on a second test for Joyce Richardson.

ROWAN Drilling Co. is completing another producer in the Venice field, Plaquemines Parish, coastal Louisiana, for Tide Water Associated Oil Co., and the company is drilling 9,400 ft. in No. 1 Hubbard, a joint wildcat operation located in Brazoria County, Texas.

O. W. DYERS has started another operation in the Hardin field, Liberty County, Texas, for himself as No. 3 Humphrey, F. Hardin Survey, was spudded.

JACK FRAZIER is rigging up in Karnes County, Texas, for his No. 1 Cockran, a wildcat test located about 5½ miles south of Nixon in Karnes County. Projected depth is 3,000 ft.

W. B. OMOHUNDRO, independent operator and drilling contractor of Wichita Falls, Tex., will drill a 6,000-ft. wildcat test 6 miles south of Belcherville in Montague County, North Texas. The hole will be drilled with a big rotary rig capable of going to 10,000 ft. The rig is being exhibited at the exposition in Tulsa and will not be delivered to the purchaser, Mr. Omohundro, until after the show. The new wildcat is No. 1 J. R. Lawson, N. Kimbro Survey, Abstract 405, and was formerly staked by W. H. Peckham.

WALTER GANT, Ardmore, Okla., producer and drilling contractor, will drill a wildcat for Gulf Oil Corp. in Montague County, North Texas. It will be No. 1 Earl Spring, Section 33, Block 4, H.&T.C. Survey, west offset to the W. B. Omohundro discovery well south of Ringgold in the western part of the county. The location is on a block of 7,211 acres of which Gulf purchased half interest from Walter Gant for the reported consideration of $487,500 cash. The contractor is preparing to move in rotary rig at once for immediate spudding.

JONES Drilling Co., Dallas, Tex., has been awarded the drilling contract for a wildcat test in Henderson County, East Texas. The wildcat will be drilled for Phillips Drilling Co. of San Antonio, Tex., and will be No. 1 Mrs. E. Hall estate, northeast corner of 341-acre tract, W. C. Chenoworth Survey. The location is about 3 miles north of the Anderson County line. Contractor was moving in rig and building derrick for immediate spudding. It is contracted to the Woodbine sand.

HENRY J. DE ARMAN, drilling contractor of Houston, Tex., has received contract from Haynes B. Ownby Drilling Co., Dallas, Tex., for a 6,500-ft. wildcat test in the Sylvarena area of Smith County, Mississippi. The location for the test is in NE cor. Section 1½-2n-9e. Contractor is moving rig to the location.

D. D. THOMAS, drilling contractor and independent operator of San Angelo, Tex., is drilling the third test in the Maljamar field of Lea County, New Mexico, for Col. Albert Woods of Artesia, N. M. The operation is No. 1-B Simon. Mr. Thomas has contracted for two tests in the Loco Hills

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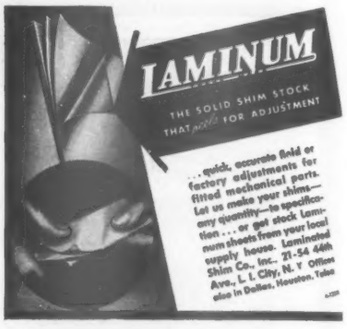
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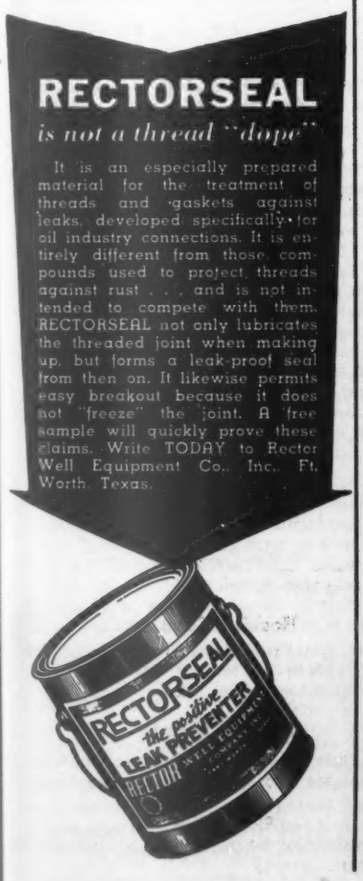
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area of Eddy County and is moving a string of tools from the McCamey area of Upton County to the Loco Hills field.

OLSON Drilling Co., Tulsa, which is drilling for and in partnership with Moore Exploration Co., a wildcat in Crockett County, West Texas, is indicating a new discovery well. The two firms' No. 1 Noelke, Section 10, Block GG, H.E.&W.T. Survey, 6 miles southeast of the recent strike by Soma Oil & Gas Syndicate, is bottomed at 2,233 ft. in saturation and is testing.

CLAUDE WENTWORTH, who inaugurated the Claude Drilling Co. in 1929 serving as its president during that time, has severed his connection with that company and has formed his own drilling company in Tulsa.

LONGHORN Drilling Co. received contract from Texas Conservative Co. for No. 1 T. H. Isensee, a semi-wildcat located about 1½ miles east of the Robstown field in Nueces County.

HARRY L. EDWARDS Drilling Co. has moved a rotary to the Anse La Butte field, St. Martin Parish, coastal Louisiana, for Stanolind Oil & Gas Co. Other operations are reported at the Bay City, Dickinson, Abbeville and Old Ocean fields for Pan American Production Co., Midstates Oil Co., Continental Oil Co., and Harrison & Abercrombie.

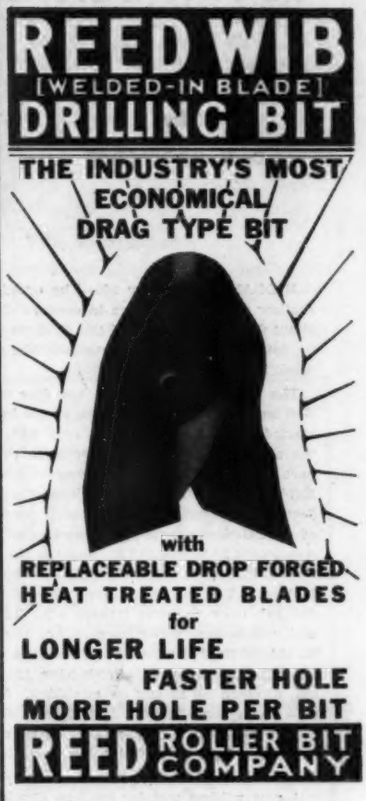
GEORGE ECHOLS has started a new operation in Wharton County, Texas, Titantic Oil Co.'s No. 1 Kountze, in the Hillje area. The well is located in the Morris and Cummings Survey, Section 3, and will be drilled to a depth of approximately 5,900 ft. Another operation is reported in the League City field, Galveston County, for Phillips Petroleum Co.

BOB MILLER, drilling contractor of St. Joseph, Mo., spudded at American Oil & Gas Corp.'s No. 1 Thompson, SW SW Section 30-58-31w, near Amity, DeKalb County, Missouri.

NOBLE Drilling Co., Tulsa, has contract for two of the new wells being drilled by Pure Oil Co. in the recently discovered Cumberland pool in Marshall County, Oklahoma. Olson Drilling Co. is the contractor on another test in Marshall County and has sent a large group of workmen to the area, which is expected to be the scene of much drilling activity within the next year. Loffland Brothers Drilling Co. has contract for the fourth new well, which is located in Bryan County, across the Washita River from the Marshall County tests.

O. C. MYERS Drilling Co., Wewoka, Okla., has contracted to drill a Wilcox sand test for Charles F. Newson and associates at No. 1 Oakes, SW NE SW Section 16-7-6, northeast of the West Little River pool in Seminole County, Oklahoma.

Drilling crew of Norris & Ferral, Centralia, Ill. Don Rice, Frank Rice, L. H. Davis and F. C. Norris, driller



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West, Central and Panhandle Texas

By D. H. STORMONT

Crockett and Ector Counties Have New Pools in Prospect

MIDLAND, Tex., May 20.—The opening of a second shallow oil-producing area in western Crockett County, about 6 miles southeast of the field recently discovered by Soma Oil & Gas Syndicate, held the attention of the week in the West Texas district.

The indicated field opener, together with a new location and the nearing of critical stages in all of the tests started in that shallow-sand area last week, centered the attention for the third week on the northwestern part of Crockett County. The newest discovery is Moore Exploration Co. and Olson Drilling Co.'s No. 1 Noelke, Section 10, Block GG, H.E.&W.T. Survey. A section of saturated cavernous lime was topped at 2,150 ft. and penetrated 83 ft. to 2,233 ft. Early in the week swabbing tests failed to lower the fluid level below 100 ft. off bottom. The well was given two acid wash jobs of 250 gal. each and was treated with 2,200 gal. of acid under pressure. After circulating, the well swabbed 25 bbl. of fluid the first hour and 33⅓ bbl. during the following 90 minutes. Production then settled to 7 bbl. of clean oil hourly by swabbing. Although a new oil area of some magnitude has been discovered, operators were drilling deeper as the week closed and were below 2,257 ft. A rock bit has been installed on the tubing for deepening.

A new wildcat test for western Crockett County has been staked by Gregory & McCandless on acreage obtained from the Shannon estate since the discovery by the Soma firm several weeks ago. The new test is No. 1 Shannon estate, 1,787 ft. from the south and 3,107 ft. from the east lines of League 3, Archer County School Lands Survey. Road is being built to the location which is 3½ miles east and slightly north of discovery well of Soma Oil & Gas Syndicate.

An east offset to the Soma discovery, Lewis & Shannon's No. 1 Noelke, also in Section 30, Block GG, H.E.& W.T. Survey, was last reported drilling below 400 ft.

Ector Discovery Indicated

In extreme northwestern Ector County and north of the Goldsmith field, M. A. Grisham and others' No. 1 R. B. Cowden, Section 4, Block 43, Township 1n, T.&P. Survey, was testing at the rate of about 200 bbl. of oil daily, swabbing, to open a new Permian lime pool. On last swabbing test the well recovered 144 bbl. of oil in 12 hours, with a slight amount of drilling fluid still present with the oil. The hole is bottomed at 4,516 ft., plugged back from 6,090 ft. where it was a failure in the deep Holt horizon. Since plugging back to the regular Double Mountain pay zone of Ector County, the well has been given a three-stage acid treatment with 1,500, 3,000 and 5,000 gal., respectively.

Wildcat Locations

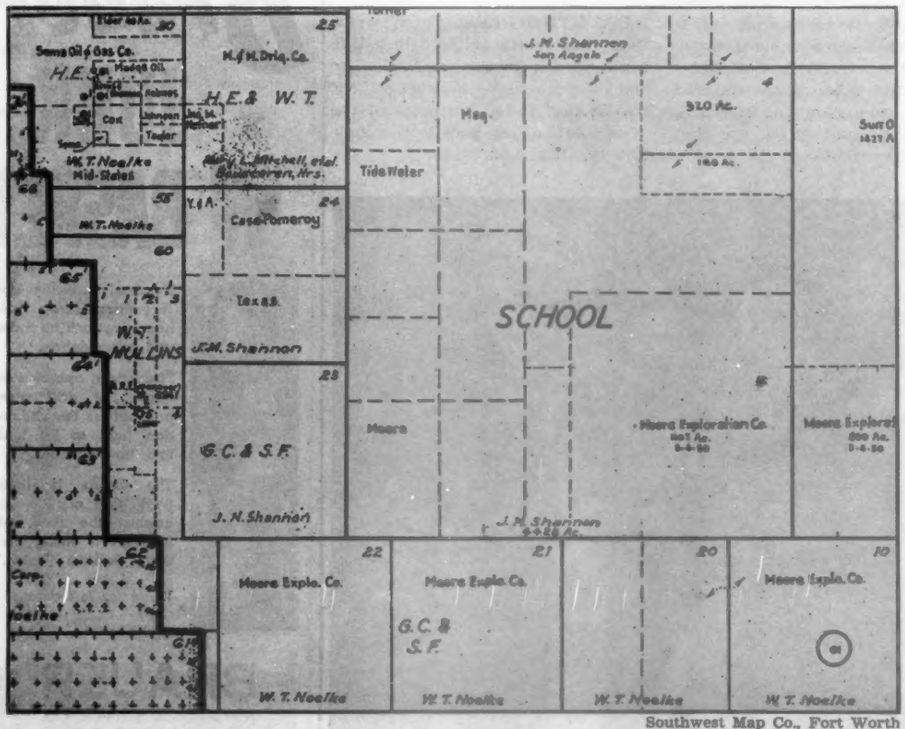
Five new wildcat locations were made in four West Texas counties during the week, Winkler, Reagan, Scurry and Mitchell all receiving operations. Mitchell County accounted for two wildcats, B. R. S. Oil Co.'s No. 1 M. A. Berry, 407 ft. from the south and east lines of Section 83, Block 97, H.&T.C. Survey, moving in materials, and J. B. Ewing's No. 1 L. A. Strain, a location 330 ft. from the north and 2,970 ft. from the west lines of Section 63, Block 97, H.&T.C. Survey.

In Reagan County R. E. Ringo located his No. 1 fee, a 3,500-ft. test, 1,320 ft. from the north and west lines of Section 22, Block K. Scurry County's new operation is Ordovician Oil Co.'s No. 1 O. L. Burney, 330 ft. from the north and west lines of Section 146, Block 97, H.& T.C. Survey. It is drilling below 100 ft.

Winkler County was given a new wildcat when Gulf Oil Corp. located No. 130 O'Brien, 330 ft. from the south and east lines of SW Section 11, Block F, G.M.M. B.&A. Survey. Derrick is being erected.

Ward County

The indicated new discovery area west of the Estes field in central Ward County received a set-back during the week when testing revealed the presence of a large volume of water. The well, Atlantic Refining Co. and Standard Oil Co. of Texas' No. 1 Wickett-University, Section 12, Block 16, University Lands Survey, drilled plug early in the week and started flowing into the pits at the rate of about 30 bbl. hourly. Further testing on following days led to a final flow of 20 bbl. of fluid hourly, about 70 per cent of which was water. The test has been shut down for orders at a total depth of 2,920 ft.



Southwest Map Co., Fort Worth

About 6 miles southeast of the area recently opened by Soma Oil & Gas Syndicate in western Crockett County, Moore Exploration Co. and Olson Drilling Co. are indicating a new discovery. A zone of saturation and porosity was drilled in the 2,200-ft. level, but the test was being carried deeper in search of further pay. The well made an average of 25 bbl. hourly from the 2,200-ft. level

WEST TEXAS FIELD COMPLETIONS

Andrews County

In the Means field Humble Oil & Refining Co.'s No. 80 J. S. Means, 4,500-40 ft., 990 bbl. A wildcat, Illinois Oil Co.'s No. 1 University, dry and abandoned at total depth of 5,611 ft.

Crane County

In the Dunes field Shell Oil Co., Inc.'s No. 4-B University, 3,380-3,645 ft., 1,124 bbl. A wildcat, Gulf Oil Corp.'s No. 1-K University, dry and abandoned at total depth of 3,424 ft.

Crockett County

In the Todd field Continental Oil Co.'s No. 3-B Todd, 5,750-5,850 ft., 2,268 bbl. daily from crinoidal lime.

Ector County

In the North Cowden field Barnsdall Oil Co.'s No. 7 Smith, 4,068-4,204 ft., 1,444 bbl. Broderick & Calvert's No. 12-A Holt, 4,390-4,450 ft., 752 bbl.

In the Foster field Cities Service Oil Co.'s No. 2 Rhoades, 4,085-4,193 ft., 699 bbl. Continental Oil Co.'s No. 2-B Johnson, 4,177-4,287 ft., 728 bbl. Sinclair Prairie Oil Co.'s No. 3-C Johnson, 4,036-4,185 ft., 404 bbl. Stanolind Oil & Gas Co.'s No. 38 Witcher, 3,950-4,110 ft., 869 bbl.

In the Goldsmith field Continental Oil Co.'s No. 5-C Kloh, 4,205-85 ft., 386 bbl. Gulf Oil Corp.'s No. 274 Goldsmith, 4,182-4,242 ft., 1,342 bbl.

In the Jordan field Texas Co.'s No. 3 Ida McDonald, 3,425-3,700 ft., 2,152 bbl.

Gaines County

In the Seminole field Amerada Petroleum Corp.'s No. 2 Mann, 5,018-5,210 ft., 811 bbl. Magnolia-Atlantic's No. 4-219 H. & J., 5,125-5,261 ft., 746 bbl.

In the Wasson field Continental Oil Co.'s No. A-50-2 Wasson, 4,885-5,030 ft., 916 bbl.

Hockley County

In the Slaughter field Honolulu Oil Corp.'s No. 6-21 Slaughter, 4,934-92 ft., 593 bbl. Texas Co.'s No. 9 Slaughter, 4,860-4,985 ft., 491 bbl.

Howard County

In the Chalk field Lockhart Petroleum Co.'s No. 4 Scott, 2,648-2,918 ft., 11 bbl. (old well drilled deeper).

Pecos County

In the Lehn field Sahara Oil Co.'s No. 2-A Sullivan, 1,666-1,755 ft., 28 bbl.

Mitchell County

R. J. Wallace's No. 2 Foster, 2,390-2,808 ft., 223 bbl.

Upton County

In the McElroy field Upton Oil Co.'s No. 4 Crier-McElroy, 2,570-2,867 ft., 2,709 bbl.

Ward County

In the Hutchins field Gulf Oil Corp.'s No. 140 Hutchins, 2,648-2,736 ft., 990 bbl.

In the Estes field Sinclair Prairie Oil Co.'s No. 26 Archenhold, 2,502-3,030 ft., 307 bbl. Richardson Oil, Inc.'s No. 5-A Hathaway, 2,297-2,380 ft., 49,000,000 cu. ft. of gas.

Winkler County

In the Keystone field Gulf Oil Corp.'s No. 36 Keystone, 3,260-3,425 ft., 497 bbl.

Yoakum County

In the Wasson field Aloco Oil Co.'s No. 8 Hovencamp, 4,885-5,091 ft., 1,949 bbl. Aloco Oil Co.'s No. 4 Walker, 4,905-5,275 ft., 605 bbl. Aloco Oil Co.'s No. 7-B Willard, 4,985-5,233 ft., 810 bbl. Anderson-Prichard Oil Corp.'s No. 3-759 Gibson-Willard, 4,900-5,190 ft., 1,372 bbl. Argo Oil Corp.'s No. 1-B Comer, 4,965-5,185 ft., 865 bbl. Honolulu Oil Corp.'s No. 12-695 Bennett, 5,160-5,230 ft., 595 bbl. Honolulu Oil Corp.'s No. 10-X-804 Wilder, 5,000-5,150 ft., 930 bbl. Magnolia Petroleum Co.'s No. 14 Mahoney, 5,003-5,182 ft., 1,102 bbl. Oil Development Co.'s No. 1-765 fee, 4,880-5,230 ft., 480 bbl. Plymouth Oil Co.'s No. 3-B Bennett, 5,005-5,236 ft., 988 bbl. Shell Oil Co., Inc.'s No. 14-C Baumgart, 4,925-5,186 ft., 1,838 bbl. Texas Pacific Coal & Oil Co.'s No. 1 W. D. Hearne, 5,090-5,242 ft., 1,313 bbl.

WEST CENTRAL TEXAS

FORT WORTH, Tex., May 20.—Scattered activity throughout several counties headed an uneventful week in the West Central Texas district. Stephens, Shackelford and Jones counties shared the lead in field development.

Falcon Oil Co., Fort Worth, which is completing a slight extensioner to the Stribling field in Stephens County, has announced the purchase of additional acreage to the north of the new well. The company's No. 1 Robertson, SW cor. NW Peter Norton Survey, north offset to the recently completed Clyde Greathouse No. 1 Robertson, is testing an estimated 50 bbl. hourly after acid treatment. The well topped the Caddo lime at 3,542 ft. and drilled in saturation to 3,573 ft., total depth. It was acidized with 1,500 gal.

The new acquisition for Falcon Oil Co. in the field is out of the southern part of the Peter Sloan Survey which is immediately north of the survey containing the new producer. The tract purchased was from Ross Sloan and R. K. Gaston and amounted to 160 acres.

Indicating new work for the southern part of the Stribling field, Clyde Greathouse is planning to start a test on the Atchison lease which is ½ mile south of the southernmost producer in the field.

Shackelford County

A new test for the northeast side of the 10-year old Bluff Creek field in western Shackelford County has been started by Westexas Oil & Royalty Corp. and L. C. Heltzel. It will be No. 14 J. P. Morris, located 660 ft. from the south and 220 ft. from the west lines of SW Section 192, E.T. Survey. It is contracted to the 1,600-ft. horizon.

Seven miles southeast of Albany and extending the shallow Hope sand field a location to the east, R. H. Roark has completed No. 4 Ace Hickman for 51 bbl. daily, pumping from the sand at 659 ft. The new well is located in the center SW Section 16, L.A.L. Survey.

Jones County

Final gage has been reported for Jones County's first Gunsight lime field opener. It is F. E. Farrell's No. 1 Reid, SW cor. Section 31, Deaf and Dumb Asylum lands, in the central part of the county. After acid treatment the well made 124 bbl. of oil, pumping, in 24 hours. No water was present. Production is from 2,566-70 ft.

Jones County's new field discovered last month by Tom D. Humphrey in the W. V. Triplett lands, 2 miles west of the Hawley field, registered its second producer when the discovery operator completed No. 2 Triplett from the 2,178-ft. horizon. The new producer has cemented casing and will be drilled in this week. The discovery well was completed for 288 bbl. daily.

WEST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Brown County

A wildcat, Robertson's No. 1 McGary-Gibbs, Sec. 1, H.&T.C. Survey, dry and abandoned at 980 ft. A wildcat, Stuard's No. 1 Henningan, Section 1, M.E.&P. Survey, top Caddo lime 949 ft., treated with 1,000 gal. from 961-76 ft., completed for 17 bbl. fluid with 50 per cent water.

Callahan County

In the Baird field Pepper's No. 1 Carmichael, dry and abandoned at 790 ft. In the Hatchett field O'Dell's No. 1 Hatchell, dry and abandoned at 455 ft. A wildcat, Lee's No. 1 Ross, Section 98, B.B.B.&C. Survey, dry and abandoned at 1,707 ft.

Comanche County

A wildcat, Bassart's No. 1 Tate, J. M. Robinson Survey, Abstract 1170, dry and abandoned at 748 ft.

Jones County

An outpost to the Avoca field, Jones & Stasney and Groover & Rose's No. 1 Humphrey, Section 192, B.B.B. & C. Survey, top Palo Pinto lime 3,291 ft., dry and abandoned at 3,397 ft.

In the South Lueders field Martin & Son's No. 2 Davis, 1,707-13 ft., 70 bbl. In the Harvey-Simmons field Texas Central Co.'s No. 1 Harvey, 1,580-82 ft., 40 bbl.

A wildcat, W. I. Southern, Inc.'s No. 1 Hayden, G. Martinez Survey, Abstract 195, dry and abandoned at 2,616 ft.

In the Akard field Ungren & Frazier's No. 1 Akard, 2,125-30 ft., 83 bbl.

Palo Pinto County

A wildcat, Crow & Sons' No. 1 Belding, Section 103, B.B.B.&C. Survey, top Caddo at 3,367 ft., dry and abandoned at total depth 4,258 ft.

In the Strawn field Palo Pinto Oil & Gas Co.'s No.

(Continued on Page 119)

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Oklahoma Operations

By
DAL DALRYMPLE

Extend Dill Pool, Complete Pottawatomie County Strike

With routine operations proceeding at many Oklahoma wildcats, there were few developments of outstanding interest the past week. A discovery well in Pottawatomie County was completed, the Dill pool of Okfuskee County was extended into Seminole County, several outposts were abandoned and some new ones were started.

Johnson-Kemnitz Drilling Co. and McGraw Oil Co.'s No. 1 Neff-Godfrey, SW SE NE Section 14-6s-6e, wildcat southwest of the Cumberland pool in Marshall County, originally drilled to 4,582 ft. and plugged back to 3,800 ft., was expected to be drilled to Arbuckle lime after reconditioning hole. Efforts to develop commercial production in upper formations were unsuccessful. Drilling was proceeding at four tests on the Pure Oil Co.'s block in the Cumberland area, near the discovery well.

Hearing on application of Portable Drilling Co. for a 20-acre well-spacing order in the new Perkins pool, Lincoln County, has been set by the Corporation Commission for May 29. The order, if granted, will cover all of Section 24 and E½ of Section 23-17-2e. The discovery and only completed well is estimated good for 500 bbl. of oil and 20,000,000 cu. ft. of gas daily from Hunton lime at 4,500-10 ft. Tests northeast of the discovery are being drilled by Portable and D. B. Malernee.

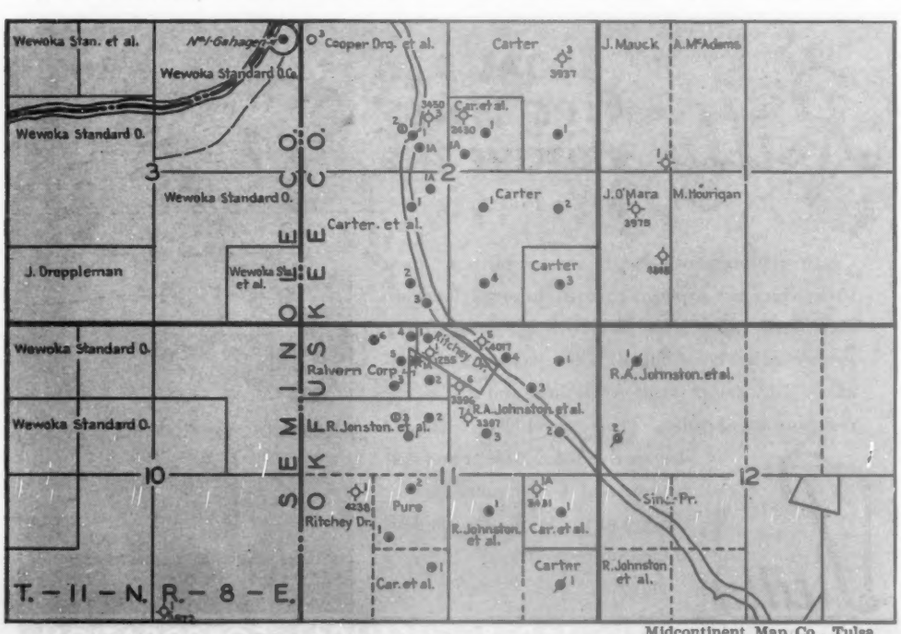
New wildcats included Paul B. Scott's No. 1 Masonic Foundation, NW NW SW Section 13-4s-13w, west of Randlett, Cotton County, a Canyon lime test; J. C. Jenkins' No. 1 Whitehead, NE cor. Section 3-1s-13w, Comanche County; North American Oil Corp.'s No. 1 Hale, NE NW NE Section 20-4-7, Oakman area, Pontotoc County; J. R. Higgins and others' No. 1 Sands, NE NE SE Section 26-11-8, south of the Dill pool, Okfuskee County, and Roy Starr and W. C. McBride, Inc.'s No. 1 State-Bayless, SE SE NW Section 32-5-4, a Wilcox sand test west of the Bebee pool, Pontotoc County.

Among the Wildcats

Howard Berkey's No. 1 Wilson, NW NW NW Section 4-11-6, wildcat in northern Pottawatomie County and south of Prague in Lincoln County, was completed to open a new producing area. It found Wilcox sand at 4,633 ft., was bottomed at 4,688 ft., casing was perforated at 3,261-75 ft., and it pumped and flowed 181½ bbl. of oil in 24 hours, with no water. Gravity of the oil was 34°. Senora sand, producing formation, was found at 3,258-3,305 ft.

Ray Dunnett's No. 1 Ewton, NE NE NE Section 1-10-5e, had Hunton lime at 5,362 ft., total depth 5,380 ft., and was dry and abandoned. Dutton's No. 1 Main, SE NE NE Section 30-17-3e, Lincoln County, had dry sand at 1,499-1,507 ft., total depth, and was abandoned. Aladdin Petroleum Co.'s No. 1 Wentz, C W½ NE SW Section 11-22-2e, Noble County, had second Wilcox sand at 4,444 ft., total depth 4,486 ft., and was dry and abandoned. Simpson-Roodhouse Drilling Co.'s No. 1 Neal, NW NE SE Section 33-6-3e, Pottawatomie County, topped Viola lime at 4,006 ft. and was dry and abandoned at 4,012 ft. Gled Oil Co.'s No. 1 McCurdy, NE NE NE Section 18-6-17w, Kiowa County, was dry and abandoned at 883 ft. in Pontotoc formation. Spink's No. 1 Spink, NE NE SE Section 11-5-17w, Kiowa County, found granite at 331-340 ft., total depth, and was abandoned. Selby Oil & Gas Co.'s No. 1 Abbott, SW SW NW Section 11-5s-12w, Cotton County, topped Arbuckle lime at 3,205 ft. and was dry and abandoned at total depth of 3,485 ft.

Jenkins' No. 1 Whitehead, NE NE NE Section 3-1s-13w, near Holiday, Comanche County, was drilling below 500 ft. Starr Oil Co.'s No. 1 State, SE SE NW Section 32-5-4, west of Bebee field, Pontotoc County, was a location. Anderson-Prichard Oil Co.'s No. 1 Smith, SE SW NE Section 18-15-5, northwest of the Davenport field, Lincoln County, was a rig. H. & H. Co.'s No. 1 Linsenmeyer, SE SE SW Section 3-18-4, south of the Ingalls pool, Payne County, had dug cellar and pits. Dempsey's No. 1 Marrs, NE NW SE Section 29-18-8, Creek County, spudded. Cities Service Oil Co.'s No. 1 Sinnett, SE SE SW Section 14-20-4, Payne County, was a rig. Kirksey's No. 1 Garner, NE SW SE Section 24-1n-17w, northeast of Manitou, Tillman County, was drilling below 620 ft.



Midcontinent Map Co., Tulsa

Wewoka Standard Oil Co. and John Droppleman's No. 1 Gahagan, NE NE NE Section 3-11-8, extended the Dill pool of Okfuskee County ½ mile northwestward and into northeastern Seminole County. Producing from Cromwell sand, it flowed 800 bbl. of oil through ¾-in choke in 24 hours

Seminole County

Thompson's No. 1 Harryman D, NE SE SE Section 33-7-6, Dora pool, Seminole County, pumped 70 bbl. of oil and 30 bbl. of water after a shot from sand at 2,811-66 ft., total depth. Same operators' No. 2 Harryman D, NW SE SE Section 33-7-6, had sand at 2,770-2,884 ft., total depth, was shot and flowed 130 bbl. of oil in 24 hours.

Texas Co.'s No. 5 Eliza, NE NW SE Section 19-7-8, Fish field, topped dolomite at 4,105 ft., Wilcox sand 4,156 ft., total depth 4,162 ft., plugged back to 4,115 ft. and pumped 240 bbl. of oil and 500 bbl. of water daily. McMahon's No. 2 Burgess, NE NE NE Section 29-6-6, Konawa area, found Viola lime at 3,311 ft., was bottomed at 3,688 ft., plugged back to 3,608 ft., perforated casing and gaged 27,750,000 cu. ft. of gas daily.

Paul McIntyre's No. 7 Johnson, CNL SW NE Section 10-10-8, Cromwell pool, found sand at 1,611-53 ft., total depth, was shot, swabbed 40 bbl. of oil in 24 hours and was completed, pumping 30 bbl. daily. Culver and others' No. 1 Willmott, SE NW SW Section 3-5-5, South Konawa pool, pumped 80 bbl. of oil and 20 bbl. of water through perforations at 2,175-99 ft. It topped Viola lime at 2,803 ft. and hole was bottomed at 2,822 ft.

The Dill pool of western Okfuskee County was extended into Seminole County at Wewoka by Standard Oil Co. and John Droppleman's No. 1 Gahagan, NE NE NE Section 3-11-8. Wapanucka formation was topped at 3,540 ft., Cromwell sand 3,550 ft., Hunton lime 4,082 ft., and hole was bottomed at 4,160 ft. Casing was perforated at 3,545-60 ft. and it flowed 711 bbl. of 37-gravity oil in 4 hours. It was completed, flowing 800 bbl. of oil through ¾-in. choke in 24 hours.

Culver and others' No. 1 Whitney, NE NE NW Section 10-5-5, was completed recently for 15 bbl. of oil at total depth of 2,705 ft.

Newsom's No. 1 Oaks, SW NE SW Section 16-7-6, spudded. Paul McIntyre's No. 8 Johnson, CWL SW NE Section 10-10-8, was rigging up machine.

Pottawatomie County

Ray Dunnett's No. 2 Rogers, SE SE SW Section 31-11-4, Shawnee pool, Pottawatomie County, had Earlsboro sand at 4,433 ft., total depth 4,472 ft., was shot and flowed 557 bbl. of oil in 24 hours.

Denver Producing & Refining Co.'s No. 1 Hurford, C N½ N½ SE Section 2-6-4, an old well in the St. Louis field, bottomed at 4,315 ft., was dry and abandoned after casing was perforated in upper zones. Same company's No. 3 Richards, SE NE NE Section 2-6-4, had Earlsboro sand at 3,260 ft. and was dry and abandoned at 3,382 ft.

Rischer's No. 1 Brown, NE SE NE Section 15-7-4, old well in St. Louis area, was deepened from 3,996 ft. to dolomite at 4,176 ft., total depth 4,191 ft., and pumped 105 bbl. of oil and 15 bbl. of water daily.

Marko's No. 1 Kittredge, C NE SE Section 15-7-3e, had dug cellar and pits. George Butcher's No. 1 Taylor, SE NE NE Section 35-10-4, set 10-in. pipe at 74 ft. and was waiting on cement. G. & M. Co.'s No. 1 Rogers, SE SW SW Section 31-11-4, was a rig.

Pontotoc County

W. B. Pine's No. 1 Jetter, SE SE SW Section 26-5-4, Bebee pool, Pontotoc County, topped Viola lime at 2,383 ft., total depth 2,622 ft., was shot and pumped 220 bbl. of oil and 36 bbl. of water daily. Senora Oil

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& Gas Co.'s No. 1 Summers, NE SW SW Section 25-5-4, had dolomite at 2,620 ft., total depth 2,652 ft., plugged back to 2,647 ft. and was shot, pumping 35 bbl. of oil daily. L. & L. Co.'s No. 1 McCoole, SE SW NE Section 6-4-7, had sand at 1,487 ft., total depth 1,571 ft., and pumped 6 bbl. of oil daily. Gilmore's No. 1-A Gilmore, NW NE NW Section 15-5-8, Allen district, was completed for 15 bbl. of oil daily after a shot, producing from sand found at 770-794 ft., total depth.

New activity in Pontotoc County: Senora Oil & Gas Co.'s No. 1 Cotton, SW SE SW Section 13-5-4, drilling below 1,632 ft. Hall's No. 1 Haskins, SW SW SW Section 26-5-4, drilling below 1,111 ft.; Sinclair Prairie Oil Co.'s No. 17 Rolls, SE SW SE Section 28-5-8, location.

Creek County

Bruin Oil Co.'s No. 3 Morton, SE NE SW Section 27-14-10, Creek County, found Wilcox sand at 3,308 ft., total depth 3,321 ft., was shot and swabbed 20 bbl. of oil in 24 hours. Chapman's No. 1 Culp, NE NE NE Section 2-14-10, had a hole full of water in Wilcox sand at 3,118-25 ft., and was abandoned. Riddle's No. 1 Mills, NW NW SW Section 15-15-9, was dry and abandoned in Wilcox sand at 3,625-47 ft., total depth. Robbins' No. 1 Brown, NE NE SW Section 11-17-9, found dry Bartlesville sand at 2,481-2,567 ft., total depth, and was abandoned. Strozier Drilling Co.'s No. 9 Bierly, C N½ SW Section 12-16-11, was completed for 45 bbl. of oil daily at total depth of 1,794 ft. Sinclair Prairie Oil Co.'s No. 27 Kiefer, NE SW NE SE Section 17-17-12, was dry and abandoned at 1,538 ft.

Hughes County

Davon's No. 1 White, C SW SE Section 5-8-10, an old well in the North Yeager pool, Hughes County, was deepened from 3,096 ft., in Cromwell sand topped at 3,091 ft., to 3,115 ft., swabbed 40 bbl. of oil daily and was recompleted.

In Okfuskee County Seran's No. 4 Seran, NW NW NW Section 2-11-8, was spudded. Wells' No. 1 Fletcher, SE SW SE Section 24-10-11, was a machine.

Okmulgee County

J. L. Selby's No. 14 Flint, C E½ SW SE NW Section 26-14-14, Okmulgee County, was completed for 3 bbl. of oil daily at total depth of 1,040 ft. M. Kirkland's No. 2 Green, NE SE NE Section 24-15-12, was bottomed at 1,640 ft., and produced 20 bbl. of oil daily. J. E. Wallace's No. 18 Colbert, SE SE SW NE Section 14-14-14, was dry and abandoned at 605 ft.

Tulsa-Muskogee Counties

C. C. Cummings' No. 1-A fee, NW NW NW Section 1-19-13e, Tulsa County, was dry and abandoned at 1,098 ft., total depth.

Dempsey and others' No. 1 Elliott, NE NW SE Section 26-15-17, Muskogee County, was dry and abandoned at total depth of 1,185 ft.

Wagoner County

Recent completions in Wagoner County included the following: J. F. Quinn's No. 1 fee, NW SE SE Section 16-16-15, total depth 1,420 ft., dry and abandoned; Hartman & Morrow's No. 1-A Kersey, SE SE NE NW Section 16-17-15, dry and abandoned at 1,352 ft.; Schmidt's No. 5 Porter, NE SE SW Section 23-17-15, total depth 1,045 ft., 20 bbl. of oil; Gartner's No. 1 Poulson, NW NW SE Section 16-17-17, total depth 1,002 ft., gaged 200,000 cu. ft. of gas; Gartner and others' No. 4 Rittenhouse, SW SW SW NE Section 16-17-17, total depth 640 ft., 15 bbl. of oil; M. J. Martin's No. 3 Walcott, SE NW NW Section 36-18-15, total depth 1,034 ft., 8 bbl. of oil; J. L. Garrett's No. 9 Robson, NW SW NE Section 21-19-15, total depth 997 ft., 35 bbl. of oil; Woodward and others' No. 1-A Robson, NE SE NW Section 21-19-15, total depth 1,006 ft., 35 bbl. of oil.

Caddo County

Ohio Oil Co.'s No. 15 Pau-Kune, C SW SE Section 3-5-9w, Cement field, Caddo County, had Noble-Olson sand at 3,258 ft., Rowe sand 3,407 ft., total depth 3,503 ft., and was perforated in three zones. It flowed 265 bbl. of oil in 4 hours through casing and was completed.

Same company's No. 7 Wagner, NW SE SW Section 12-5-9w, had Rowe formation at 3,334-2,400 ft., total depth, casing was perforated and it swabbed and flowed 136 bbl. of oil in 4 hours, completed.

Same company's No. 2 Yule, SW NE SW Section

(Continued on Page 132)

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North and East Texas

By
D. H. STORMONT

No Stop to Deep Exploration Because of Recent Failures

WICHITA FALLS, Tex., May 20.—Despite the fact that nearly a half dozen deep failures have been drilled in the northern part of the Fort Worth basin since the completion of Sinclair Prairie Oil Co.'s discovery at Bonita and W. B. Omohundro's discovery at Ringgold, new wildcats continue to be staked throughout the entire basin area.

Summarizing the week's activity in the district, the status of the deep exploratory campaign stands as follows: W. B. Omohundro has taken over the old W. H. Peckham deal 6 miles south of Belcherville in Montague County and is moving in materials for a 6,000-ft. wildcat. Larry E. Hults and Tom B. Owens, both of Fort Worth, have staked location for the deepest test ever started in the area, a 7,500-ft. wildcat in the southwestern corner of Montague County. Gulf Oil Corp. is moving in materials for a direct west offset to the Omohundro strike just south of Ringgold in western Montague County. Wirt Franklin and W. B. Omohundro have taken over a test 5 miles north of Henrietta in Clay County and plan to deepen from its present depth of 4,850 ft. to the Caddo lime expected at about 5,900 ft.

Surveying the active wildcats of the district it is seen that both of Sinclair Prairie Oil Co.'s offset tests to its discovery well at Bonita were dry in the discovery horizon and also both encountered salt water when drilled deeper to the Ellenburger lime. Ramsey Petroleum Corp.'s No. 1 Magee, just outside the city limits of Montague and one of the most closely watched tests in the entire play, has encountered salt water and is being considered for abandonment.

Ringgold District

With hopes for any large field fairly well dashed at Bonita, attention in the district as the week closed centered on the Ringgold area surrounding the W. B. Omohundro discovery. No tests have yet reached the discovery level of this field opener, but, two tests are nearing the horizon, one being only a few hundred feet above the discovery pay.

With the Omohundro strike having been completed from the 5,690 ft. pay level, British American Oil Producing Co.'s No. 1 Martin, Section 27, Block 4, H.&T.C. Survey, ½ mile north of the discovery, was last reported below 5,615 ft. or only about 75 ft. from the top of the pay level. The company has drilled the well as a "tight" operation and no geological information is available.

As a west offset to the Omohundro strike, Fain-McGaha Oil Corp. is drilling below 2,300 ft. in its No. 1 Spring, Section 33, Block 4, H.&T.C. Survey.

A new location was made by Gulf Oil Corp. when it staked No. 1 Earl Spring, direct west offset to the discovery and between it and the Fain-McGaha operation. The location is on a block of 7,211 acres lying in both Montague and Clay counties and out of which the Gulf purchased one-half interest for Walter Gant of Ardmore, Okla., for the reported consideration of $487,500 cash. Contract for the test has been let to Gant and initial work is expected to start this week.

Wildcat Operations

Hults & Owens have located their No. 1 W. E. Summers in the southwest corner of a 160-acre tract in Section 2821, T.E.&L. Survey, 5 miles southwest of Stoneburg and in the southwestern part of Montague County. It will be the deepest for the area since the start of the basin play, it being contracted to 7,500 ft., or the Ellenburger lime. Hults, holder of considerable acreage in the county, announced the sale of 725 acres 2 miles south of the Omohundro discovery to Shell Oil Co., Inc., for a consideration of $75 per acre, cash. The deal involved $54,375.

Six miles south of Belcherville in the northern part of Montague County and several miles east of the Omohundro strike, W. B. Omohundro has taken over the location staked several months ago by W. H. Peckham and plans to drill to 6,000 ft. It will be No. 1 J. R. Lawson, on a 287-acre tract in the N. Kimbro Survey, Abstract 405, on a 2,000-acre block. Operations will start within the next 2 weeks.

Five miles north of Henrietta in Clay County Wirt Franklin and W. B. Omohundro have taken over an old 4,850-ft. failure and plan to deepen to the Caddo lime expected at about 4,900 ft. The test is No. 1 Eleanor Staggs, 3,160 ft. from the west line and 1,040 ft. from the north line of the Staggs tract, Angelina County School Lands Survey, Abstract 34.

Just outside the town of Montague in central Montague County, Ramsey Petroleum Corp.'s No. 1 Magee, A. C. Davis Survey, is bottomed at 6,541 ft. in the Bend series and is planning an electrical survey of the hole. The test showed slight saturation in a conglomerate section from 6,349 to 6,357 ft., but it was not believed capable of commercial production. Abandonment is thought probable for the wildcat.

Bonita Area

Sinclair Prairie Oil Co.'s No. 1 Doty and No. 2 Howard, west and south offsets, respectively, to the company's No. 1 Howard which opened a new field just southwest of Bonita in Montague County, have both been considered for abandonment. Showing much the same drilling record, both tests failed to find production in the 5,200-ft. pay of the discovery well. Both were drilled deeper and found salt water in the Ellenburger lime. No. 1 Doty, J. N. Jones Survey, was plugged back to 5,272 ft. and casing perforated at 5,271-72 ft. Only salt water showed on tests and the perforations have been cemented off. The No. 2 Howard is waiting for cement to set after plugging back from 5,852 ft. to about 5,700 ft. for a test.

EASTERN TEXAS

DALLAS, Tex., May 20.—Wildcat locations and wildcat failures featured the week's development in the eastern Texas district, seven wildcats having been abandoned and three new ones started.

In Anderson County Phillips Drilling Co. staked location for No. 1 Susie Hands, W. C. Collingsworth Survey, 13 miles northwest of the town of Franks. It is contracted to the Woodbine sand.

In Angelina County Sumerall & Harris have located No. 2 G. E. Condra, in the D. W. Maroney Survey, ½ mile west of the town of Huntington.

Van Zandt County's new operation was Graddy's No. 1 Dr. C. Brandon, W. C. Scott Survey, 5 miles northeast of Edgewood. The operator is building derrick and plans to move in materials this week. It is projected to the Woodbine sand.

The majority of the abandonments included tests which had been shut down for several weeks. There were three dry holes in Navarro County, two in Rusk County, and one each in McLennan and Nacogdoches counties.

Northwestern Henderson County registered a new operation as another attempt was started to find the fault-line production southwest of the Rowe and Baker field. W. R. Manning, Houston, Tex., was moving in tools for a test on the T. N. Bell 40-acre tract in the D. Muckleroy Survey, about ¼-mile southwest of the two-well Rowe and Baker field. Tools are being moved from the Manning's recent failure, No. 1 Thompson, Meux Survey, nearly a mile farther south. The test is Manning's fourth in the area, two dry holes having been drilled north of production in the field.

Materials are being moved in for southern Henderson County's recently staked wildcat operation. It is Phillips Drilling Co.'s No. 1 Mrs. E. Hall estate, NE cor. 341-acre tract in the W. C. Chenoworth Survey. It is on a block of 4,800 acres and Jones Drilling Co., Dallas, Tex., has the contract.

Deep Tests

Two deep tests drew considerable attention during the week, one in Kaufman County and one in Gregg County. T. G. Shaw's No. 1 Wynne, lower Trinity wildcat test in Kaufman County and located in the Newman Survey, was last reported drilling below 5,800 ft. after topping the upper Glen Rose section between 5,225-40 ft.

In Gregg County and as an eastern outpost to the two-well Willow Springs field, Roger Lacey's No. 1 fee, Ford Survey, Trinity test seeking gas production for the city of Longview, was last reported to have setting 5½-in. casing at 7,252 ft. The plug will be drilled early this week. The test is reported to have logged 48 ft. of porosity.

EAST TEXAS FIELD COMPLETIONS

(One-hour gages)

Gregg County—Kilgore Area

Humble Oil & Refining Co.'s No. 99-B S. S. Laird, 3,538-78 ft., 58 bbl.

Rusk County—Joiner Area

Texas-Canadian Oil Co.'s No. 5 T. J. Cos, 3,638-29 ft., 21 bbl.

Upshur County—Longview Area

B. F. Phillips' No. 2 J. McBride, 3,600-29 ft., 40 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gages)

Anderson County

Cayuga field: Carter-Gragg Oil Co.'s No. 1 E. F. Hill, 5,317-26 ft., 41 bbl.

Franklin County

Talco field: Humble Oil & Refining Co.'s No. 16 Pennfee, 4,230-97 ft., 614 bbl.

Houston County

Grapeland gas field: American Liberty Oil Co.'s No. 1 G. L. Streetman, total depth 6,025 ft., made 115,000,000 cu. ft. of gas. American Liberty Oil Co.'s No. 1 L. E. Warner, total depth 6,051 ft., made 14,500,000 cu. ft. gas. Grapeland Gas Co.'s No. 1 J. W. Ellison, total depth 6,050 ft., made 70,000,000 cu. ft. of gas and 42 bbl. distillate.

McLennan County

A wildcat, T. H. Smart's No. 1 J. W. Mann, top Buda 730 ft., top Del Rio 746 ft., top Glen Rose 1,360 ft., dry and abandoned at 1,400 ft.

Navarro County

Wildcats: C. L. Brown's No. 1 W. J. Trammell, dry and abandoned at total depth of 3,175 ft. C. F. Carter's No. 1 Allen Eden, dry and abandoned at total depth of 1,201 ft. Guy Sitton's No. 2 Flemming, dry and abandoned at total depth of 1,625 ft.

Rusk County

A wildcat, Jeff Bolton's No. 2 Hall Wood, dry and abandoned at total depth of 4,201 ft. An old failure reinstated to deepen, J. S. Harrell's No. 1 Citizens

State Bank, junked hole at original total depth of 6,802 ft. when could not clean out to bottom.

Nacogdoches County

A wildcat, Melrose Oil Co.'s No. 2 C. N. Wilson, dry and abandoned at total depth of 2,411 ft.

Smith County

Chapel Hill field: Sun Oil Co.'s No. 1 Huddle, total depth of 8,228 ft., completed for 160 bbl. distillate and 2,750,000 cu. ft. of gas.

NORTH TEXAS COMPLETIONS

Archer County

P. L. and Ben Andrews' No. 1 N. I. Andrews, 998-1,058 ft., 40 bbl. Barnes and others' No. 4 Ray Carson B, 4,336-85 ft., 726 bbl. Continental Oil Co.'s No. 15 L. F. Wilson McCrory, 4,301-84 ft., 1,320 bbl. Deep Oil Development Co.'s No. 4 Ray Carson, 4,319-40 ft., 1,540 bbl. Deep Oil Development Co.'s No. 5 Ray Carson, 4,314-52 ft., 1,260 bbl. Hammon and others' No. 2 W. P. Ferguson B, 3,775-89 ft., 565 bbl. Helmerich & Payne's No. 7 Shepherd, abandoned location. Helmerich & Payne's No. 7 W. T. Finley, 4,292-4,309 ft., 960 bbl. Ligon and others' No. 6 J. A. Little B, 1,318-25 ft., 50 bbl. L. Sikes' No. 2 O. T. Anderson B, 4,041-62 ft., 248 bbl. Texas Co.'s No. 40 L. F. Wilson A, 4,355-4,402 ft., 925 bbl. J. H. Turner and others' No. 1 J. D. Sadau, 1,515 ft., dry.

Jack County

Dallas Royalty Co.'s No. 1 Mrs. H. E. Epperson, 3,155-3,205 ft., 400 bbl. Steed and others' No. 1 Stewart, 2,896-3,073 ft., 154 bbl. Trentman and others' No. 3 Owens and others, 3,085-3,272 ft., 275 bbl.

Montague County

Falls & Yeargin's No. 16 Crow, 752-82 ft., 10 bbl.

Clay County

E. N. Costley and others' No. 7 W. J. McInnes A, 248-56 ft., 5 bbl. E. N. Costley and others' No. 1 W. J. McInnes C, 240-56 ft., 7 bbl. E. N. Costley and others' No. 6 C. T. Taylor C, 1,088-93 ft., 200 bbl. E. N. Costley and others' No. 7 C. T. Taylor D, 1,072 ft., dry. J. A. Morgan's No. 1 C. T. Taylor, 405 ft., dry.

Cooke County

Shaw Oil Co.'s No. 5 Stark and others, 1,122-46 ft., 160 bbl.

Wichita County

Barrow and others' No. 2 C. Birk A, 4,000-4,127 ft., 330 bbl. L. T. Burns' No. 26 Waggoner Brothers, 3,759-3,812 ft., 866 bbl. Consolidated Oil Co.'s No. 4 E. M. Barnes, 3,990-4,012 ft., 720 bbl. Doss and others' No. 4 W. W. Overby, 3,880-4,052 ft., 90 bbl. E. C. Oil Co.'s No. 6 W. L. Hodges A, 3,720-3,852 ft., 1,080 bbl. E. C. Oil Co.'s No. 7 W. L. Hodges A, 3,855-3,926 ft., 550 bbl. W. H. Hammon's No. 16 S. H. McCarty C, 3,721-3,840 ft., 648 bbl. Hammon and others' No. 17 Fassett & Tuttle, 3,938-4,034 ft., 560 bbl. Hedrick Oil Co.'s No. 1 J. D. Cooper, 1,609 ft., dry. Hines & Humble's No. 8 Waggoner, 3,802-64 ft., 300 bbl. King Oil Co.'s No. 11 W. T. Waggoner R, 1,573-83 ft., 72 bbl. Texas Co.'s No. 20 Waggoner Brothers A, 3,785-3,851 ft., 665 bbl. Tide Water and others' No. 9 Charles Pettit, 3,720-3,845 ft., 820 bbl. Tide Water and others' No. 12 Charles Pettit, 3,685-3,792 ft., 913 bbl. Tide Water and others' No. 15 Charles Pettit, 3,708-95 ft., 695 bbl. Tide Water and others' No. 21 Charles Pettit, 3,695-3,810 ft., 600 bbl. Tide Water and others' No. 2 Pettit-State, 3,870-3,953 ft., 1,440 bbl.

Wilbarger County

Paradise Oil Co.'s No. 6 W. T. Waggoner B, 1,532-66 ft., 250 bbl. Pois & Schulz's No. 3 J. Streit and others, 2,034 ft., dry.

Young County

P. Atchley's No. 1 Benson B, 910 ft., dry. O. L. Carrico's No. 1 N. Burch, 500 ft., dry. Gilmore and others' No. 1 M. A. Stewart, 699 ft., dry. T. W. Grice's No. 1 S. F. Wallace, 281 ft., dry. Knox and others' No. 1 J. H. Robertson, 3,454-76 ft., 556 bbl.

Kentucky Fields

(Continued from Page 95)

Kentucky-West Virginia Gas Co. is down 100 ft., in slate, in No. 5269 Jeff Jervis (John Crider) on Home Branch.

WESTERN KENTUCKY

OWENSBORO, Ky., May 20.—Three 10-bbl. wells and 16 new operations were reported from the western Kentucky fields in the past week. Following are reports from seven counties:

Butler County, Huntsville district: J. P. Patrick and others' No. 4 V. H. Harrison, moving in. Silver City district: Billy Phillips' No. 5 Martha Hawes, spudding.

Daviess County, Utica district: H. C. Farmer and others' No. 3 J. E. Brown, south 50 acres, moving in. United Petroleum Co.'s No. 1 C. R. Cox, moving in. C. E. Daugherty and others' No. 2 C. W. Howard, old dry hole, at 1,178 ft., being drilled deeper from Jett to Jones sand. Baldwin Oil Co.'s No. 1 W. D. Iglehart, 13 acres, rigging up. Roy Beard's No. 1 Utica church lot, abandoned location. Red Hill district: Hal Compton and others' No. 4 F. Jackson, 10-bbl. well in Jett and Jones sands, total depth 1,010 ft. Handyville district: Master Oil Co.'s No. 5 E. W. Richmond, spudding in.

Hancock County, Easton district: J. H. Taulbee's No. 1 H. T. Keown, 40 acres, spudding. Saunders School district: W. J. Flesher's No. 4 Jane Saunders, 10-bbl. well in Barlow sand total depth 526 ft. Maceo district: Jack Cox' No. 2 L. R. Waltman, spudding in.

Henderson County, Hebbardsville district: George Matthews and others' No. 1 Lee Schaffer, rigging up.

Ohio County, Friendship Church district: Oliver Jenkins and others' No. 3 E. M. Royal heirs, moving in. Olaton district: Porter Evans and others' No. 1 Schultz, location. Sunnydale district: J. W. Tuttle and others' No. 5 O. E. Wimsatt, rigging up. Wanna Oil Co.'s No. 4 S. H. Smith, 10-bbl. well in Pennsylvanian sand, total depth 435 ft. Narrows district: Thrasher & White's No. 2 Annie Turnham, location.

Todd County, 4 miles northwest of Daysville: A. A. Peard and others' No. 1 L. G. Estes, abandoned location.

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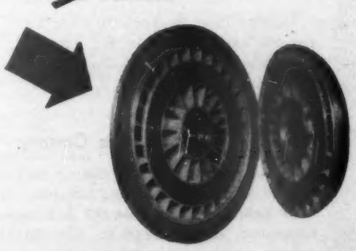

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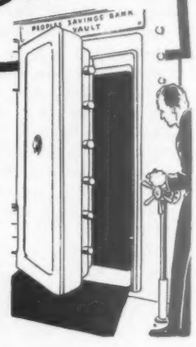

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Small New Wells No Check to Michigan Declining Potential

By OTTO C. PRESSPRICH

SAGINAW, Mich., May 20. — With new completions failing to offset declining production in established fields, Michigan's oil industry in the past week appeared to be turning again to the southwestern areas for further development, an indication from that fact that the most of 37 drilling permits, largest number for any one week this year, were for those sections.

Twenty-four completions were reported last week, including two abandoned locations. Ten wells got production with an initial total of a little under 1,800 bbl. a day; 12 others were abandoned as dry.

Compilation of production figures for April revealed a daily production of 61,040 bbl. from 2,852 wells, a drop of approximately 1,000 bbl. a day, for a month's total of 1,831,200 bbl. The drop was in the Freeman-Redding field of Clare County and in the Kent-Ottawa sector in the southwest. Allegan County production was on the upgrade, the result of new wells completed in the Heath Township area, now getting big play.

Best of the 10 new producers was George Kernodle's No. 1 McKay in Kent County's Walker Township, the well rating 640 bbl. a day, initially, after acid treatment. Isabella County's Wise field, where several good wells have been completed in recent weeks, came through with two more as Cities Service Oil Co. recorded 430 bbl. initial from No. 1 Tubbs-Nixon and 258 bbl. from No. 3 Tice. Other Central Michigan operations had little success as a Taggart Brothers gas test was abandoned in Greenwood Township of Clare County, a Shiawassee County oil search was halted and, farther north, a Missaukee County exploratory test was halted in Riverside Township at a depth of 3,945 ft.

Of the permits issued by the state Conservation Department, 10 of 14 for Allegan County are for tests in Heath Township. Six others are for the Tallmadge Township district of Ottawa County, five for Kent County. The rest went, one or two to a county, to Van Buren, Clare, Gladwin, Arenac, Monroe, Lenawee, Muskegon, Kalamazoo, and Genesee.

The completions summary for last week:

MICHIGAN CRUDE PRODUCTION

Pool and county—	Wells	Daily runs
Porter-Yost	342	5,018
Greendale, Chippewa	184	1,313
Geneva, Midland	2	14
Edenville, Midland	26	356
Sherman, Isabella	58	1,449
Wise, Isabella	35	2,816
Vernon-Leaton, Denver	78	796
Freeman-Redding, Clare	138	12,861
Grant, Clare	3	.....
Beaverton, Gladwin	20	147
Bentley, Gladwin	35	355
Buckeye, Gladwin	311	3,016
Secord, Gladwin	2	.....
Ogemaw	236	1,432
Adams, Arenac	14	106
Clayton, Arenac	51	1,112
Tuscola	5	.....
Saginaw Bay area	57	103
Birch Run	25	31
Dundee-Monroe	9	353
Montcalm	36	337
Allegan (all pools)	463	8,444
Muskegon	62	62
Holland, Ottawa	1	35
Zeeland, Ottawa	2	20
Walker-Wyoming, Tallmadge	372	15,526
Bloomingdale, Columbia	274	5,212
Bangor, Van Buren	11	126
Total	2,852	61,040

Clare County

Greenwood Township (19n-5w)—Taggart Brothers, Inc.'s No. 22 Fred Welsh, SW NE NW Section 29, a gas test, was abandoned at 1,723 ft.

Allegan County

Cheshire Township (1n-14w)—Dry at a depth of 1,376 ft., C. E. Weller and others abandoned No. 1 Fred G. Barbee, NW NW SE Section 18.

Gunplain Township (1n-11w) — Twin Drilling Co.'s No. 1 G. D. Doester, SW SE SE Section 23, was dry and abandoned at 1,594 ft.

Overisel Township (4n-14w)—Lillie & Johnson and others' No. 4-B John G. Berens, NE SW SE Section 27, produced 10 bbl. a day from 1,541 ft., after acid treatment.

Heath Township (3n-14w)—A. E. Kopprasch, trustee's No. 1 A. and G. Slikkers, NW SW NW Section 2, was abandoned dry at 1,585 ft.

Isabella County

Wise Township (16n-3w)—Cities Service Oil Co.'s No. 1 Tubbs-Nixon, NW NW SE Section 17, was good for 430 bbl. a day, after acid treatment, total depth being 3,744 ft., while No. 3 Tice, SE SE NE Section 29, rated 258 bbl., after acidization, at 3,702 ft.

Kent County

Algoma Township (9n-11w)—Socony-Vacuum Oil Co.'s No. 1 Arthur Turner, NE NE NW Section 26, was dry at 2,398 ft.

Walker Township (7n-12w)—Best well of the week was George L. Kernodle's No. 1 Frank McKay, SW SW SW Section 19, completed at 1,908 ft., and rated at 640 bbl. a day, after acid treatment. Smith Petroleum Co. and others' No. 2 Van Poortvliet, east line Section 28, was dry and abandoned at 1,871 ft., as was Wolverine Natural Gas Corp.'s No. 1 Frank Rapp, SE NE NE Section 30, at 2,044 ft. Ide Oil & Gas Corp.'s No. 2 George Burgess, NW NW NE Section 32, was producing 90 bbl. a day, after being acidized from 1,907 ft., and Welsh Oil Co.'s No. 1-A J. Cuddihy, SE SW NE Section 33, acid treated and completed at 1,949 ft., rated 50 bbl. a day.

Wyoming Township (6n-12w)—Michigan Devonian Petroleum Co. temporarily abandoned location on No. 1 Gard and others, SW SW SE Section 14.

Missaukee County

Riverside Township (21n-7w)—McClanahan Oil Co. and Rowmor Corp.'s No. 1 Cornelius Quist, C N½ NW NW Section 22, was abandoned at 3,945 ft.

Ottawa County

Holland Township (5n-15w)—Century Oil & Gas Co.'s No. 1 Helene Dalenberg and others, NE SW NE Section 33, was dry at 1,546 ft.

Tallmadge Township (7n-13w) — American Drilling Co. abandoned location for No. 5 John Zokoe, NW NE SW Section 24, as three wells were completed for production in Section 23. They are Smith Petroleum Co.'s No. 5 Masterson, NE SW SE, rating 60 bbl. a day, at 1,872 ft., after acid treatment; George L. Kernodle's No. 2 Bursma, SW SE NE, 75 bbl., after acid treatment, at 1,886 ft., and Edward B. Strom, trustee's No. 1

(Continued on Page 121)

Gulf Coast Fields

(Continued from Page 96)

choke. Humble Oil & Refining Co.'s No. 4-A Holderrieth, 5,571 ft., dry and abandoned.

Jackson County

Mauritz field: Seaport Oil Co.'s No. 1-A Mauritz, perforated casing 5,552-58 ft., 120 bbl., 9/64-in. choke. West Ranch field: Magnolia Petroleum Co.'s No. 67-A West, perforated casing 5,752-60 ft., 219 bbl., ¼-in. choke.

Jefferson County

Fannett field: Gulf Oil Corp.'s No. 4 Bordages, perforated casing 8,220-36 ft., 820 bbl., ¼-in. choke. Lovells Lake field: Humble Oil & Refining Co.'s No. 20 Broussard, sand 7,778-90 ft., 158 bbl., ⅛-in. choke.

Wabash County

Withers field: Texas Co.'s No. 51 Pierce, perforated casing 5,375-90 ft., 121 bbl., 10/64-in. choke. Texas Co.'s No. 71-C Pierce, perforated casing 5,388-92 ft., 101 bbl., ⅛-in. choke.

California Field Report

By L. P. STOCKMAN

Union Oil Co. Meets Standard February 1 Fuel-Oil Price Cut

LOS ANGELES, Calif., May 20.—The paradoxical situation of two different crude-oil price schedules for the same gravity oil was corrected this week when Union Oil Co. on May 18 met the crude-oil price reduction posted by Standard Oil Co. on February 1. For the past several months, Union Oil Co., General Petroleum Corp., Texas Co., Shell Oil Co., Inc., and Tide Water Associated Oil Co. have maintained higher crude-oil price schedules than Standard Oil Co. in the hope that fuel-oil prices might be stabilized at 90 cents per barrel. Standard Oil Co. cut fuel-oil prices 15 cents per barrel at the beginning of the current year bringing the base price down from 90 cents per barrel to 75 cents per barrel. Other marketers maintained a fictitious fuel-oil price of 90 cents per barrel until late in April when all marketers officially set the price at 75 cents per barrel which quotation still prevails. All marketing agencies and many crude-oil producers severely criticised Standard Oil Co. for cutting crude-oil prices in the face of declining stocks of refinery residuum and heavy crude oil. Because of this other marketers attempted to maintain the existing crude-oil price schedules but with fuel oil selling at 75 cents per barrel were forced last week to capitulate and adopt the lower price schedule posted by Standard on February 1. Adoption of Standard's price schedule will result in a price reduction on practically all grades of crude oil but principally heavy crude.

Current crude-oil production of leading California fields follows:

	Barrels
Wilmington	84,150
Midway-Sunset	57,250
Kettleman Hills	48,500
Long Beach	45,300
Ventura Avenue	34,150
Santa Fe Springs	26,500
Huntington Beach	25,825
Coalinga	23,950
Montebello	22,125
Santa Maria Valley	18,250

New Deep Test

Of outstanding importance is the tentative location for a deep test to be drilled by Honolulu Oil Corp. in the Buena Vista Hills section of the Midway-Sunset field of Kern County. This well is scheduled to be drilled in Section 10-32-24 and the company is expected to begin drilling at an early date. All of the potentially productive acreage on the Buena Vista Hills anticline is included in a unit plan whereby, in contrast with the unit plan at Kettleman North Dome, each operator will drill and produce his own wells. This projected exploration is of primary importance because of the general belief that deeper production will be found in the Buena Vista Hills section of the Midway-Sunset field. There are 39,040 acres within the area included in the unit plan of development for the Buena Vista Hills. Of this amount, 24,640 acres or 63.1 per cent, are owned in fee, 10,800 acres or 27.7 per cent are U. S. Navy fee of leased lands and 3,600 acres or 9.2 per cent are under lease from the Department of Interior. Largest holders within the scope of the unit plan of development in Buena Vista Hills are Standard Oil Co. with 20,550 acres; Honolulu Oil Corp. with 4,120 acres; North American Oil Consolidated, 3,240 acres; Murvale Oil Co., 1,980 acres; Tide Water Associated Oil Co., 1,280 acres; General Petroleum Corp., 920 acres; Union Oil Co., 800 acres; Claude R. Blodgett and Midway Basin Oil Co., 640 acres each; Texas Co., 580 acres; Maricopa Investment Co., 500 acres; Rio Bravo Pioneer Oil Co. and United Oil Co., 400 acres each; U. S. Navy, 1,220 acres and 13 others, 1,770 acres.

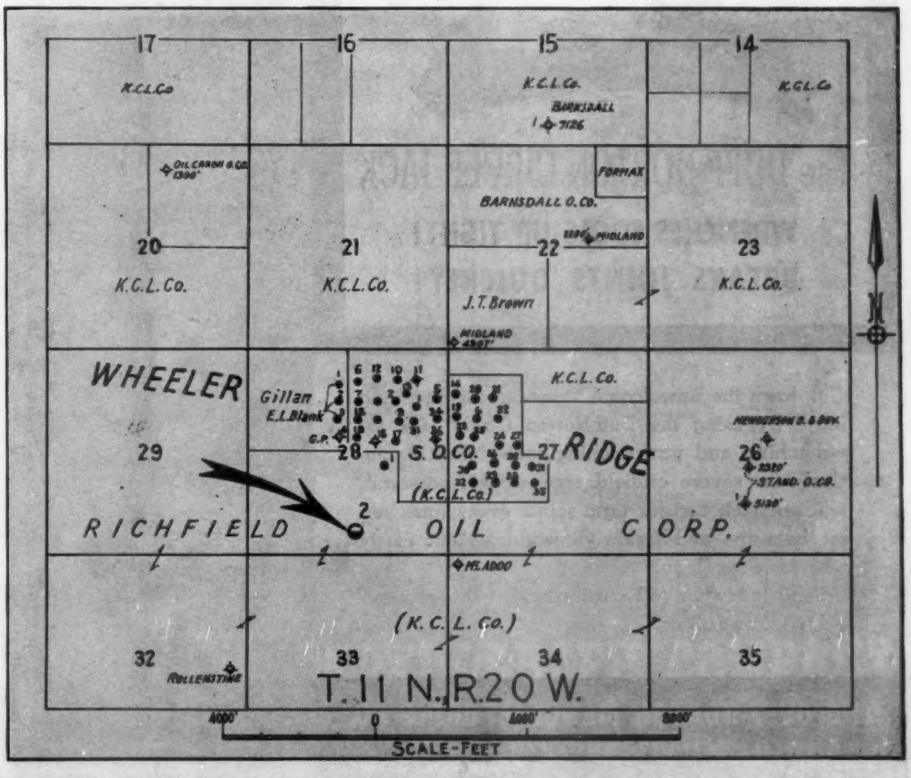
Buena Vista Hills consist of a low range in the southern part of the San Joaquin Valley in Kern County and are roughly parallel to the adjacent Temblor Range to the south. To the north, Elk Hills oil field parallels the Buena Vista Hills. Present productive measures are found in the Etchegoin formation of Pliocene age with a dry-gas zone of limited extent overlying the crests of the anticline. The Scalez and sub-Mulinia oil zones are the source of the major portion of oil produced, but some production is coming from the Santa Margarita formation on the south flank. It is believed quite possible that deeper production can be expected in middle Miocene at about 7,500 ft., in lower Miocene at about 9,000 ft. and in the still lower Miocene at about 10,000 ft. on the crest of the structure. The Oligocene and Eocene may also prove productive.

The possibilities of deeper production in the Buena Vista Hills anticline are of importance in view of production developed in the Stevens, Rio Bravo and Vedder zones along the west rim of the San Joaquin basin. The Greeley, Ten Section, Canal, Tupman and Cole's Levee fields are all located in this general vicinity and structural and geological conditions should be more or less similar. Under the uniform development plan wells in the Buena Vista Hills anticline will be drilled on the basis of about 17.8 acres per well when entirely drilled up. If, however, changes are needed after work progresses, the plan may be changed by a vote of 80 per cent of the acreage involved. This permits enough flexibility and the plan in effect has the advantage of allowing an operator to keep control of his acreage and do his own development which is impossible at Kettleman Hills.

Wilmington

In the Wilmington field, from the Ranger zone, Union Pacific completed No. 6 Pacific Dock flowing 486 bbl. of clean 20.8-gravity oil through a 32/64-in. bean from 2,704 ft. Top of the pay was logged at 2,490 ft. and the 5-in. liner was gravel packed. No. 136 fee of Union Pacific was finished flowing 995 bbl. of 32.2-gravity oil daily through a 38/64-in. bean. Bottom of the hole was 3,940 ft. in the Terminal zone and the liner was a combination 6⅝-in. and 8⅝-in. with the former in the bottom of the hole. No. 23-E of Union Pacific was completed in the Terminal zone at 3,740 ft. flowing 206 bbl. of clean 29.7-gravity oil per day through a 36/64-in. bean. This well was carried down to 3,765 ft. but was plugged back to the effective depth before being turned over to production. A fault zone was encountered in the bottom of the hole and this was responsible for the plug being put in the bottom of the hole. As was the case with No. 136 fee, a combination 6⅝-in. and 8⅝-in. liner was used.

Hancock Oil Co. completed No. 27-A Harbor, located on property leased from the Long Beach Harbor Department. It was brought in flowing 1,279 bbl. of 24.3-gravity oil per day through a 40/64-in. bean. This well was bottomed in the pay at 4,050 ft. and showed more kick than other recent completions. In the town-lot section of the Wilmington field, M. A. K. Petroleum Corp. completed No. 1 Harbor in the Ranger zone flowing 160 bbl. of clean 14.4-gravity oil per day. Top of the pay was logged at 3,117 ft. and the hole was bottomed at 3,423 ft. and finished with a gravel-packed liner landed at 3,422 ft. Wells in the Wilmington field do not produce much gas with the oil but this apparently does not have any effect on production as the relatively large penetrations possible apparently offset the lack of gas. Continental Corp. which is developing



Richfield Oil Corp. has started a second wildcat in the Wheeler Ridge district of Kern County, California, in the extreme southern end of the San Joaquin Basin, south of a deep test that showed production possibilities about a year ago

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	May 12		May 5			
	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Intercoastal-domestic—						
Crude oil	.....	.....	.....	.....	144,217	185,791
Fuel oil	36,140	5,163	.....	.....	188,938	816,396
Diesel and gas oil	.....	.....	.....	.....	.....	163,501
Gasoline	231,991	33,142	148,563	21,223	1,132,395	1,013,805
Kerosene	.....	.....	.....	.....	.....	122,200
Foreign exports—						
Crude oil	234,791	33,542	415,088	59,298	4,730,700	5,352,983
Fuel oil	250,944	35,849	66,991	9,570	2,850,347	2,864,287
Diesel and gas oil	159,452	22,779	143,869	20,553	2,506,258	2,262,314
Gasoline	96,695	13,814	127,212	18,173	1,918,514	3,056,803
Kerosene	34,780	4,969	6,459	923	402,960	621,586
Lubricants	.....	.....	.....	.....	77,798	42,034
Coastwise-domestic—						
Crude oil	290,720	41,531	81,964	11,709	3,702,667	4,513,150
Fuel oil	278,141	39,734	117,887	16,841	5,643,566	3,550,002
Diesel and gas oil	50,936	7,277	40,375	5,768	1,132,590	979,302
Gasoline	359,775	51,396	155,410	22,201	5,844,381	5,298,370
Kerosene	20,384	2,912	.....	.....	207,939	165,555

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Fuel oil	.....	.....	.....	.....	67,840	61,281
Diesel and gas oil	.....	.....	.....	.....	281,260	89,550
Asphalt	.....	.....	.....	.....	174,268	214,652
Lubricants	.....	.....	.....	.....	11,151	11,184
Foreign exports—						
Crude oil	94,457	13,494	.....	.....	1,487,534	2,043,619
Fuel oil	78,706	11,244	44,928	6,418	655,609	885,259
Diesel and gas oil	142,872	20,410	7,094	1,013	1,108,457	772,910
Gasoline	58,780	8,397	84,504	12,072	1,025,438	1,286,106
Kerosene	7,008	1,001	.....	.....	202,539	305,252
Lubricants	849	121	.....	.....	154,540	179,506
Other finished oil	.....	.....	.....	.....	506	352
Coastwise-domestic—						
Fuel oil	162,080	23,154	55,212	7,887	2,223,962	2,160,260
Diesel and gas oil	33,255	4,751	26,388	3,770	440,509	360,692
Gasoline	156,508	22,358	68,294	9,756	2,501,219	2,425,728
Kerosene	4,391	627	10,165	1,452	216,087	250,794

a narrow strip along the west bank of the Los Angeles County Flood Control Channel has finished drilling operations on No. 3 L.A.C.F.C. but the well has not yet been turned over for a production test. Bottom of the hole has been placed beneath the flood-control channel by directional drilling. In the meantime this company has erected a new derrick and has several additional locations staked for early work. The company is keeping one string of tools in operation and is progressing northward about one location at a time. The channel is located in the most easterly part of the field where drilling operations are permitted and therefor production is limited to the Ranger zone. A fault cuts off the upper and lower Terminal zone as well as the Ford zone.

Greeley

Out on the northern front of the Greeley field, in Kern County, General Petroleum Corp. completed its second well on the Sullivan lease when No. 2 in Section 12-29-25 was brought in flowing 3,585 bbl. of 34.2-gravity oil and 3,200,000 cu. ft. of gas per day from 11,510 ft. It topped the Rio Bravo zone at 11,295 ft. and the Vedder zone at 11,350 ft. East of General Petroleum Corp.'s No. 2 Sullivan in Section 7-29-26, Standard Oil Co. completed No. 12-8 Kern County Land flowing 3,790 bbl. of 34.1-gravity oil and 3,300,000 cu. ft. of gas per day from 11,510 ft. This well logged top of the Rio Bravo zone at 11,280 ft. and cored top of the productive Vedder zone at 11,335 ft. South of No. 12-8 Kern County Land, Standard Oil Co. is rotating ahead in No. 11-22 Kern County Land in Section 18-29-26 below 9,000 ft. and at its present depth the well has to go another 2,500 ft. for completion in the deep zones. In Section 12-29-25, General Petroleum Corp. has passed 11,290 ft. in No. 1 Oughton while in Section 1-29-25, Superior Oil Co. is drilling ahead in No. 1 Merrill at 10,100 ft. and General Petroleum Corp. is just about ready to spud in No. 1 Wallace.

Coalinga

In the Southeast Coalinga field R. S. Lytle completed No. 35-18-F in Section 18-20-16 flowing 2,750 bbl. of clean 31.9-gravity oil and 1,823,000 cu. ft. of gas per day from the Gatchell zone with bottom of the hole at 7,741 ft. It flowed through a 24/64-in. bean, tubing pressure 1,070 lb. and casing pressure 1,100 lb. R. S. Lytle completed No. 68-18-F at 7,522 ft. but it has not yet been given a production test. Standard Oil Co. concluded drilling operations on No. 53-19-B in the Northeast Coalinga field at 8,139 ft. but it has not yet been tested. On a Schlumberger test top of the Kreyenhagen was found at 6,555 ft., top of the glauconitic was found at 7,700 ft. and top of the productive Gatchell sand was found at 8,060 ft. Texas Co. finished No. 1 Kimberlin in Section 20-19-16 flowing 725 bbl. of clean 29.6-gravity oil and about 1,000,000 cu. ft. of gas per day from the Gatchell zone with bottom of the hole at 8,205 ft. It topped the Kreyenhagen at 7,038 ft. and cored top of the glauconitic and productive Gatchell sand at 8,062 ft. and 8,124 ft. respectively.

Cole's Levee

Richfield Oil Corp., in the Cole's Levee-Tupman field of Kern County, completed No. 38-28-A Kern County Land in Section 28-30-25 flowing 1,150 bbl. of clean 33.6-gravity oil and 1,900,000 cu. ft. of gas per day from the Stevens zone with bottom of the hole at 9,125 ft. It topped the first Stevens sand at 8,570 ft. and has 605 ft. of formation from which to produce. This is not solid oil sand as there is a definite break between the first and second Stevens. The perforations in the liner indicate that the well is producing from 8,682-8,718 ft., 8,758-8,864 ft., 8,899-8,975 ft. and at 9,018-9,170 ft. Richfield Oil Corp. is running 13 strings of tools in the field, has 4 additional derricks standing and has staked 4 locations. This work indicates that the company will be able to increase its daily production about 6,000 bbl. per day minimum between now and the end of 1940. The exact amount of production that will be added depends upon just what the top allowable well production will be later in the year. Ohio Oil Co. is drilling ahead in the pay in No. 8-F Kern County Land in Section 11-31-25 in the Cole's Levee section of the field and spudded in No. 9-F in the same section.

Rio Bravo

Union Oil Co., discoverer of the Rio Bravo field of Kern County but which is in second place from a production standpoint, completed No. 54-34 Kern County Land in Section 34-28-25 flowing at the rate of 2,508 bbl. of clean 32.8-gravity oil and 1,615,000 cu. ft. of gas per day from the Rio Bravo sand with bottom of the home at 11,474 ft. This well was not given a full day's flow test and the initial assigned it is based on a production of 1,045 bbl. of clean oil in the first 10 hours. The well was building up at a good rate toward the end of the 10-hour test and its capacity is therefore greatly in excess of its assigned initial. Tubing pressures during the short test were between 1,500 lb. and 1,875 lb. and the casing pressure held steady at 1,800 lb.

Kettleman Hills

Standard Oil Co. completed another new well in the Kettleman North Dome field early this week when No. 41-35-Q on fee-owned land in Section 35-22-18 was brought in flowing 585 bbl. of 33.6-gravity oil and 1,000,000 cu. ft. of gas per day from the Temblor with bottom of the hole at 8,305 ft. This new well which was brought in flowing through a 36/64-in. bean showed a tubing pressure of 1,210 lb. and a casing pressure of 1,480 lb. Early this week Standard Oil Co. began rig construction for No. 1-1-U in Section 1-23-18 in the most easterly part of the Kettleman North Dome structure. This well is scheduled for completion in the

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Temblor but may later be carried down into the Eocene if conditions prove favorable. Out in the west end of the field Standard Oil Co. is having considerable trouble with No. 321-29-J in the Huffman area due to inability to shut off water. This well has been carried down into the Eocene and is bottomed at 10,345 ft. with a 6⅝-in. water string landed at 10,286 ft. Kenda has concluded drilling operations on No. 4-16-Q in Section 16-22-18 at 8,250 ft. and will finish this well in the Temblor within the next few days.

Los Angeles Basin

Tide Water Associated Oil Co. confirmed original expectations that the Aliso Canyon field in the San Fernando section of Los Angeles County would prove to be of primary importance by completing No. 13 Porter flowing 1,759 bbl. of 23.5-gravity oil and 384,000 cu. ft. of gas per day from 5,225 ft. It was brought in flowing through a 47/64-in. bean and showed a tubing pressure of 150 lb. and a casing pressure of 250 lb.

In the East Coyote field of Orange County, Sonwell Oil Co. completed No. 2 Coyote pumping 125 bbl. of 22.6-gravity oil cutting 30 per cent daily from a depth of 3,310 ft.

In the Montebello extension J. E. Mabee Co.'s No. 43 Monterey which was finished in the new 8-3 zone flowing 630 bbl. of clean 35.3-gravity oil and 1,955,000 cu. ft. of gas daily through two ¾-in. beans from a depth of 7,888 ft. This new well was brought in flowing barefoot, there being no pipe below the shoe of the 7-in. water string which was cemented at 7,805 ft. The 7,879 ft. of 2½-in. tubing had a packer at 7,739 ft. and a production valve at 7,706 ft.

In the Long Beach field of Los Angeles County, Convoy Oil Co. has completed No. 1-A Signal pumping 90 bbl. of 23.8-gravity oil cutting 5 per cent daily from the upper sand at 3,644 ft. The first hole on this lease was lost a short time ago due to mechanical trouble of an unavoidable nature.

The Rosecrans field where operators have been experiencing considerable trouble completing good wells yielded two new producers this week. Apex Petroleum Co., which drilled No. 1 Hatfield down to 9,214 ft. in an effort to develop commercial production in the lower zone, completed this well pumping 130 bbl. of 30.2-gravity oil cutting 15 per cent after plugging back the hole to 8,140 ft. Top of the O'Dea zone was cored at 7,513 ft. but cores taken at 7,500-35 ft. showed 30° dips indicating faulting and the lower part of the hole was either wet or lacked fluid in a tight formation. In the older section of the Rosecrans field, Union Oil Co. completed No. 41 Rosecrans flowing 260 bbl. of relatively clean 32.3-gravity oil per day from the O'Dea zone with bottom of the hole at 7,950 ft.

West Texas Fields

(Continued from Page 111)

18-C Strawn, dry and abandoned at total depth 3,320 ft.

Shackelford County

Wildcats, Waddington's No. 1 Smith, Section 56, B.O.A. Survey, dry and abandoned at 589 ft. Roark & Hooker's No. 1 Walker, Section 377, T.E.&L. Survey, dry and abandoned at 388 ft.

In the Cook field Roeser-Pendleton, Inc.'s No. 9-B-113 Cook, 1,542-66 ft., 33 bbl.

In the Ivy field Owens-Snebold Oil Corp.'s No. 7 Haterius, 3,163-3,200 ft., 309 bbl. fluid with 5 per cent water.

Stephens County

In the Frankell field H. Baldwin's No. 1 Walker, dry and abandoned at total depth of 2,110 ft.

TEXAS PANHANDLE COMPLETIONS

(24-hour gages)

Carson County

Magnolia Petroleum Co.'s No. 76 fee (244), 3,096-3,168 ft., 58 bbl. Magnolia Petroleum Co.'s No. 79 fee (244), 3,050-3,100 ft., 200 bbl. Shell Oil Co., Inc.'s No. 10 Cooper C, 2,955-3,070 ft., 412 bbl. Texas Co.'s No. 9 Cooper, 3,025-3,155 ft., 349 bbl.

Gray County

Continental Oil Co.'s No. 6 Benton, 3,080-3,185 ft., 79 bbl. Danube Oil Co.'s No. 1 Sackett, abandoned location. King Oil Co.'s No. 13 Horner, 3,208-60 ft., 489 bbl. Magnolia Petroleum Co.'s No. 81 fee (227), 2,920-3,076 ft., 123 bbl. Magnolia Petroleum Co.'s No. 2 Morse C, 2,560-2,685 ft., 554 bbl. Shell Oil Co., Inc.'s No. 107 Schaffer, 3,245-3,302 ft., 286 bbl. Texas Co.'s No. 19 Davis, 2,913-25 ft., 245 bbl. Yealy Oil Co.'s No. 4 Archer, 3,177-3,282 ft., 326 bbl. W. J. and John Moran's No. 3 Skidmore, 3,200-3,300 ft., 270 bbl.

Hutchinson County

Stanolind Oil & Gas Co.'s No. 14 Pitcher, 3,105-3,227 ft., 240 bbl. Texas Co.'s No. 23 Lewis, 2,980-3,020 ft., 262 bbl. Texas Co.'s No. 27 Pond, 2,960-3,030 ft., 495 bbl. C. L. McKinney's No. 7 Pitcher, 3,106-60 ft., 290 bbl. Kewanee Oil & Gas Co.'s No. 3 Timms, 2,940-3,060 ft., 148 bbl.

Moore County

Shamrock Oil & Gas Corp.'s No. 17 Sneed, 2,510-3,035 ft., 10,000,000 cu. ft. gas.

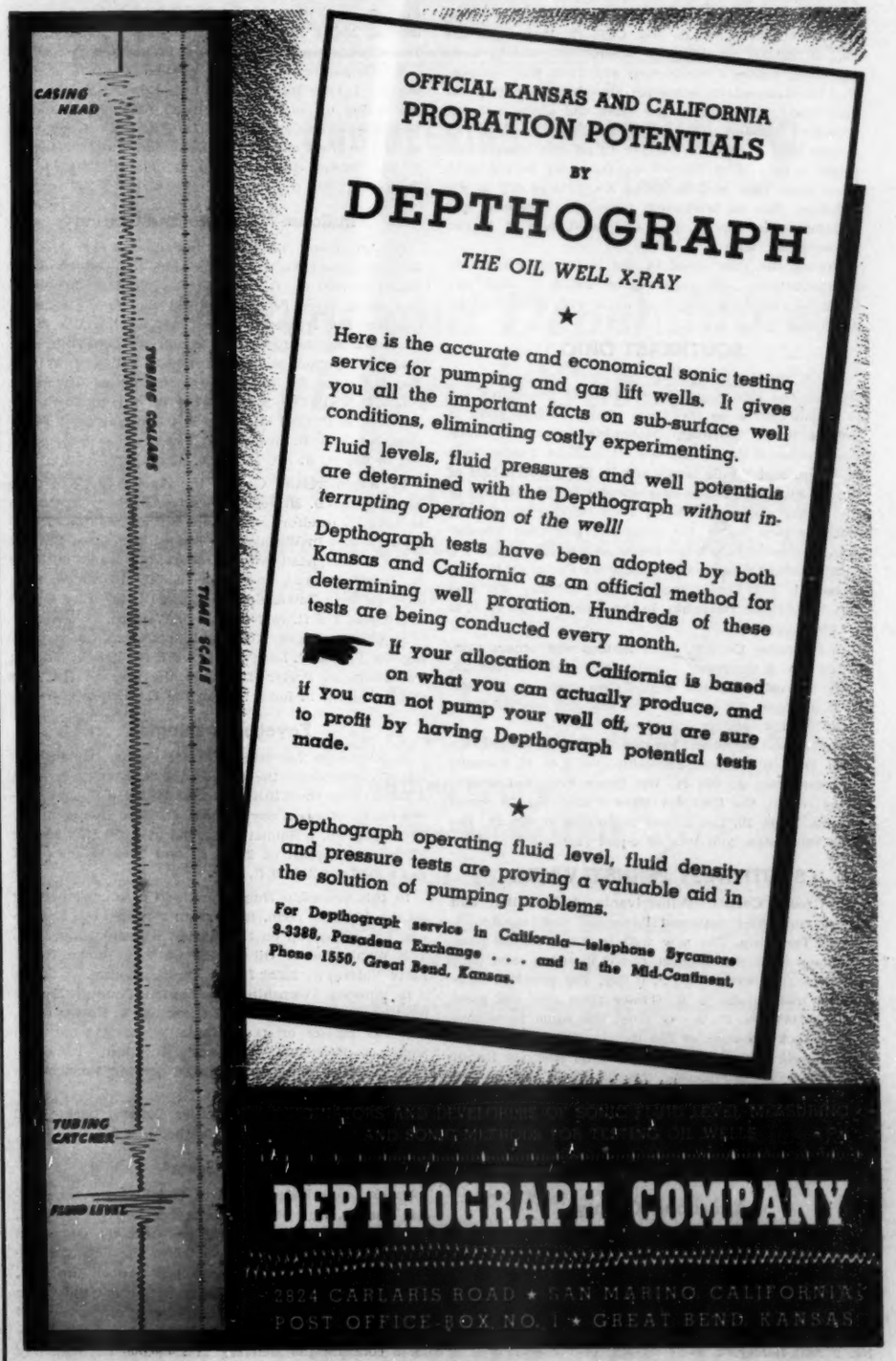
Forest City Basin

(Continued from Page 104)

Location was announced for a test in Page County, Iowa, northeast of Clarinda. W. O. Smythe of Oklahoma City and Dan McLaughlin of Des Moines and others will drill the wildcat, the No. 1 Hook, C NE NW Section 16-39n-35w.

In Missouri, American Oil & Gas Corp. of St. Joseph started work at No. 1 Thompson, SW SW Section 30-58-31w, south of Amity, DeKalb County. Bob Miller of Wichita has the contract. A majority of the financial backers are Greeks and a Greek Orthodox priest blessed the well and presided at a ceremony prior to spudding.

Brin & Nathan resumed drilling at No. 1 Decker, C NW NW Section 1-61-38w, Holt County, after setting 10-in. casing at 1,050 ft., and were making hole below 1,165 ft. T. E. Baldwin's No. 2 Johnson, SW NE Section 21-65-15w, Schuyler County, stopped at 680 ft. to run pipe. Harris & Holmes' No. 1 Newkirk, NE NE Section 11-61-11w, Knox County, hit a granite boulder at 30 ft., rig was skidded and new hole was being made below 60 ft. H. A. Black was rigging up to spud his No. 1 Champ, SW SW Section 21-62-10w, Knox County.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Eastern Field Report

By STAFF
CORRESPONDENT

Magnolia Petroleum Co. Will Start Test in Northeast Ohio

PITTSBURGH, Pa., May 20.—In Boone County, West Virginia, the Owens-Libby-Owens Gas Department completed a second Oriskany gas well on the Bull Creek Coal & Land Co. lease in Peytona district. Starting at an elevation of 1,044.6 ft., derrick floor; Corniferous lime lay at 4,550-4,648 ft., and Oriskany sand at 4,648-70 ft. Between 4,649 ft. and 4,653 ft., there is a gas pay of 500,000 cu. ft. a day before shot, which, while not large, makes a commercial well from that horizon. The Oriskany gas is being produced with a packer set and tubed. In addition, gas from the shale is being produced through the casing and braden head.

This well is west of the No. 12 on this lease which found a volume of 300,000 cu. ft. a day in the Oriskany sand. East of both wells, No. 13 was dry in the Oriskany but is producing from the Newburg and Clinton sands. No. 14, just completed, is 8 ft. higher on structure than No. 12.

During the past week in the lower eastern fields, 25 operations were reported of which 3 were dry holes, 17 gas wells, and 6 oil wells with a daily initial of 55 bbls.

SOUTHEAST OHIO

As a result of extensive surface and geophysical studies, the first location of Magnolia Petroleum Co. is announced as on the F. M. Fields 43-acre farm in Lot 19, Berlin Township, Mahoning County, of which Youngstown is the county seat. It is about 2 miles west of Berlin and 1 mile north and in the western half of the lot. Since the recent development in Illinois some of the larger companies have been making studies of more eastern states for possible underlying production. The new test, it is understood, will be deep.

In Fairfield County Gas Producing Co. of Ohio completed No. 2 J. Stanley and Geneva Holliday, SW Section 14, Walnut Township, in the lime at 1,993 ft. It is a 3-bbl. pumper.

In Guernsey County, John Bendas and others completed No. 2 Guernsey County Infirmary, Section 25, Wills Township, in the second Cow Run sand at 438 ft. It produced 15 bbl. the first day and has not been shot. The hole stands full of oil.

In Medina County the Preston Oil Co. completed two wells, both in Chatham Township. No. 5 M. H. Packard was completed at 484 ft., the Berea grit, and it produced 15 bbl. the first day after a shot. No. 16 Susan Homan, Tract 10, Lot 4, was completed at 329 ft., the same formation, and was of equal size.

SOUTHWEST PENNSYLVANIA

In Greene County, Pennsylvania, Judson Bell and others completed a second large gas well in Monongahela Township. The new well is a test on the Samuel Black farm and was completed in Injun sand with a volume of 5,000,000 cu. ft. a day. The previous completion was on the E. R. Gabler farm and was good for 4,000,000 cu. ft. a day from the same formation with a rock pressure of 275 lb.

In Morris Township, Greene County, Romney Rutan and others are completing the rig for a test on the Carter farm and the Hiawatha Oil Co. is drilling at 550 ft. in a test on the Thomas Young heirs. In Greene Township, Equitable Gas Co. is drilling No. 2 Hugh Keenan at 2,815 ft. A. V. Lewis and others have rigged up on the Smith and Pechtel lease.

Armstrong County

In Plum Creek Township, Armstrong County, Equitable Gas Co. completed a gas well on the Agnes Prugh farm at 3,620 ft., gaging 67,000 cu. ft. a day after shot. Peoples Natural Gas Co. drilled a test on the Frank Smith farm to 3,592 ft., through Tiona sand, and it was dry. William McCollins is getting ready for No. 2 Add Reefer.

In Boggs Township, Humphreys-Stone-McCall Corp. is drilling at 590 ft. in No. 2 W. R. Heffelfinger. In Cowanshannock Township Peoples Natural Gas Co. is down 1,240 ft. in No. 2 Lee Bell, and in South Bend Township is shut down at 1,853 ft. testing No. 1 John Coulter. In Valley Township, John Wray & Co. is drilling No. 1 H. M. Barker at 1,250 ft. and in Red Bank Township is drilling No. 1 O. B. Geist at 1,225 ft.

In Kittanning Township Equitable Gas Co. is drilling No. 1 Alice Boyer at 3,470 ft.; Edward Young, pulling casing to deepen No. 1 Hugh Blair; H. C. Judson and others, deepening No. 1 W. J. Gray from 1,530 ft. and drilling at 1,741 ft. In Kiskiminitas Township, T. W. Phillips Gas & Oil Co. is drilling No. 1 R. M. Burns at 1,167 ft.

Indiana-Westmoreland-Clarion

In Armstrong Township, Indiana County, J. Cloid Rinn deepened No. 1 Perdons heirs to 1,596 ft. and it tested 140,000 cu. ft. of gas a day from the Hundred-foot sand. Here Peoples Natural Gas Co. is building road for No. 1 Israel Miller. T. W. Phillips Gas & Oil Co. is drilling the following: Armstrong Township, No. 1 Mary Henderson at 945 ft.; Brush Valley Township, No. 1 George Smolar at 2,035 ft.; Center Township, No. 1 R. & P. Coal Co. at 3,120 ft.; Young Township, No. 2 R. & P. Coal Co. at 2,296 ft.; Washington Township, No. 1 E. B. Brandon at 910 ft. and running casing to 924 ft. in No. 1 Louisa Black.

In Westmoreland County the Apollo Gas Co. completed No. 1 D. M. Jones heirs in Allegheny Township at 3,612 ft. Bradford sand, with a final gage of 178,000 cu. ft. a day. In Washington Township Peoples Natural Gas Co. completed No. 1 Robert Townsend at 3,090 ft., Bradford sand, and it gages only 10,000 cu. ft. a day. In Bell Township the Kiski Valley Gas Co. is drilling at 215 ft. in No. 1 J. F. Wolford.

In Clarion County Owens Illinois Glass Co. is drilling No. 1 Lena C. Longwell at 1,370 ft. It is in Monroe Township. In Porter Township the Cottage Hill Gas Co. is moving in for a test on the E. M. Reitz farm.

Fayette-Washington

In Nicholson Township, Fayette County, Greensboro Gas Co. completed the test on the S. Kopsey farm at 2,553 ft. with the Fifth sand at 2,348-2,418 ft. and 175,000 cu. ft. of gas a day at 2,351 ft. Here this company is drilling No. 1 Emmett Diamond at 2,350 ft. with the Fifth sand topped at 2,315 ft. and 150,000 cu. ft. of gas a day at 2,316-19 ft.

In this township Duquesne Gas Co. started drilling on the I. Cover farm. In German Township J. H. Cornell has rigged up on the Marion Kurzankuskie farm. The Wahler-Power Oil & Gas Co. shut down No. 1 Felix Valerio at 2,220 ft. for engine repairs.

In Amwell Township, Washington County, Equitable Gas Co. is drilling at 235 ft. on the R. Foster farm, and has rig up on the Winnie W. Wright farm in Somerset Township. In South Franklin Township F. K. Fawcett and others started drilling No. 2 Anna Phelan.

In Middlesex Township, Butler County, Larkin and others are drilling No. 2 G. Jeuther at 2,000 ft.

Deep Tests

On Chestnut Ridge in North Union Township, Fayette County, New Penn Development Co., William E. Snee, and others have had the gas from the Onondaga lime and Oriskany sand turned into the lines for the past week, but keeping a back pressure on the well, No. 1 Piedmont Coal Co. Starting with a back pressure of 1,200 lb. in the casing and delivering against a well and line choke of 600 lb., the back pressure, in keeping a constant line delivery of 2,400,000 cu. ft. a day declined until now it is below 700 lb. In a 24-hour test the well did not rock up to much more than 1,400 lb. yet when released returned a large open flow approximating the original flow. As soon as the back pressure declines more, the tools will be run in the hole to determine if the large Oriskany flow is exhausted or other unfavorable conditions exist. It is known that just above the sand there was 50 ft. of metamorphosed chert with evidence of slickensiding which had to be cemented to stop caving. Gas may possibly be escaping through this fault as the casing was set near the top of the cherty zone or about 350 ft. above the sand.

On this ridge in South Union Township, Fayette County, the Peoples Natural Gas Co. is drilling No. 2 Piedmont Coal Co. at 1,989 ft. In Maryland New Penn Development Co., William E. Snee, and others regained the old hole on the Humberson farm on the Accident dome in Garrett County after losing it for the second time at 4,680 ft. The bottom now is 6,350 ft. On Laurel Ridge in Stewart Township, Fayette County, Pennsylvania, these operators and E. G. Mueller are drilling at 7,207 ft. on the Gregg L. Neel farm.

In Beaver County John T. Galey and others plugged back the test on the James Tennis farm in South Beaver Township from the Queenston shale at 6,823 ft. to the Oriskany sand. Here the well will be tubed and the sand chemically treated to increase the porosity.

WEST VIRGINIA

In West Virginia two small oil wells were completed in Clay County. Virginia Gasoline & Oil Co. completed No. V1282 Brown, Swann, and Goshorn in Henry district at 1,850 ft., Injun sand, and it is good for 3 bbl. a day. In Ritchie County the Hope Natural Gas Co. deepened No. 1 Cokeley heirs in Union district, a former gas well, to 1,565 ft., the Salt sand, and it is good for 4 bbl. a day.

Gas Wells

In Gilmer County McCall Drilling Co. completed No. 2 Fleet A. Fling in DeKalb district in the Injun sand at 1,694 ft. and it is a gas well gaging 300,000 cu. ft. a day. In Glenville district the Pittsburgh & West Virginia Gas Co. completed No. 7767 Lloyd Rinehart at 1,760 ft., with Big Injun sand at 1,650-1,748 ft. and 95,000 cu. ft. of gas a day before shot at 1,736-41 ft.

In Lincoln County, Brooks Gas Co. completed a gas well on the Gertie Cummings farm in Union district at 3,530 ft. with Brown shale at 3,220-3,520 ft. and a gage of 25,000 cu. ft. a day before shot.

In Marshall County Thomas and Matthew Hazlett drilled a dry hole on the Stella B. McHenry farm in Franklin district through the Dunkard sand to 1,160 ft.

In Wayne County Kentucky-West Virginia Gas Co. completed a gas well on the John Burgess farm in Union district at 3,143 ft. with the Brown shale at 2,385-2,450 ft., 2,470-2,875 ft., and 3,100-43 ft. It gages 68,000 cu. ft. a day. In this district Hale, Lowe & Francis completed a gasser on the Lucinda Luster farm at 3,150 ft. with Brown shale at 2,308-2,828 ft. and 3,052-3,150 ft. It gages 175,000 cu. ft. a day after shot.

In Stonewall district, Wayne County, Southern West Virginia Gas Corp. deepened No. 7 B. J. Pritchard starting at 1,595 ft. The Berea was placed at 2,133 ft. with gas at 2,780 ft. in the Brown shale which extended to 3,083 ft. The total volume was 68,000 cu. ft. a day.

Oriskany Gas Field

Several wells were completed in the Oriskany gas field in Kanawha County. In Poca district South Penn Natural Gas Co. completed a well on the W. E. Wheatcraft farm at 5,146 ft. with a derrick-floor elevation of 844.49 ft; Corniferous lime was at 5,011 ft.; Oriskany, 5,122 ft.; gas, 5,132, 5,136, 5,138, and 5,140 ft.

The final gage was 4,576,000 cu. ft. a day without shot. West Virginia Gas Corp. completed No. 039 Leon Jones at 4,951 ft. with the Oriskany topped at 4,911 ft. and a final volume of 1,652,000 cu. ft. a day. Godfrey L. Cabot, Inc., completed No. 2 J. T. Bonham at 1,630 ft., in Big lime, with a volume of 960,000 cu. ft. a day. William O. Ziebold is completing the test on the Hattie E. Clark farm with the Corniferous lime topped at 4,669 ft.; Oriskany, 4,775 ft., and a volume of 5,034,000 cu. ft. a day at 4,804 ft.

In Poca district Columbian Carbon Co. made a location on the Fay E. Hughart and others farm, elevation 913 ft. The Poca Fork Oil & Gas Co. will drill on the Anna M. Jones farm, elevation 950 ft.

In Poca district the United Carbon Co. topped Corniferous lime at 4,787 ft. in No. 825 W. C. Woodall and others, and is drilling at 4,630 ft. in No. 824 Rosie Scott and others. Columbian Carbon Co. topped Corniferous at 4,870 ft. in No. 1 V. E. King and others and is drilling at 3,416 ft. in No. 1 Joseph Hughart and at 1,245 ft. in No. 1 D. W. Taylor and others. United Fuel Gas Co. is drilling No. 4878 J. P. Bailey at 1,770 ft.; Godfrey L. Cabot, Inc.'s No. 4 Putnam Co. at 5,190 ft. with the Oriskany topped at 5,185 ft.; No. 1 Ida P. Gibson and others at 393 ft.; No. 3 J. T. Bonham at 4,009 ft.; West Virginia Gas Corp.'s No. 038 Elizabeth Thaxton and others at 2,676 ft.

In Union district, Kanawha County, Cameron Producing Co. topped the Oriskany sand at 4,970 ft. on the J. S. Casdorph farm. In Elk district Linden Drilling Co. is down 1,818 ft. in No. 2 S. D. Robinson.

In Jackson County, Joe Rubin and others are drilling at 1,960 ft. in the wildcat on the C. E. Andricks farm in Grant district.

Ohio Fields

(Continued from Page 95)

ship Ohio Fuel Gas Co.'s No. 1 Otho Gillett, Section 17, has a shut-in volume of 150,000 cu. ft. of gas after the Ohio shales were shot with 3,000 lb. of gelatin, depth 2,848 ft.

In the Newark field in Licking County, Newark Township, the Davidson & Rubin test in Lot 29, of Broadway Manor subdivision, was abandoned after finding a small gas showing in the Clinton, depth 2,350 ft. In Mary Ann Township, William Stricker and others' No. 1 Zar Fisk, Lot 2, first quarter, has 70,000 cu. ft. of gas, open flow, from Berea sand at 577-84 ft.

In the Chatham Township field, Medina County, Edson & Son made five Berea completions: No. 5 J. H. Auble, Lot 13, Tract 16, dry, depth 349 ft.; No. 5 J. H. Auble, Lot 4, Tract 15, dry, depth 350 ft.; Nos. 10, 11, and 12 Samuel Brant, Lot 2, Tract 16, made initial production of 15 bbl., 5 bbl., and 10 bbl., respectively, depths were 485 ft., 492 ft., and 498 ft. The Preston Oil Co.'s No. 21 Susan Homan, Lot 4, Tract 10, was dry, depth 338 ft.

In Muskingum County, Newton Township, Atha Co.'s No. 1 O. A. Kroft, Section 13, gaged 1,400,000 cu. ft. of gas, open flow, Clinton at 3,413-59 ft.

In Perry County, Clayton Township, Preston Oil Co.'s No. 2 W. H. Pettit, Section 17, made 23 bbl. of oil the first 24 hours after shot from the Clinton, depth 3,264 ft. In Coal Township Chartiers Oil Co.'s No. 218 Hocking Valley Products Co., Section 33, is a small pumper with an initial production of 14 bbl. the first 24 hours after shot. Clinton is at 3,424-79 ft.

In Summit County, Boston Township, Dempsey Co.'s No. 1 R. F. Mueller, Lot 2, Section 1, had 250,000 cu. ft. of gas, naturally, in the Newberg, shot increased to 400,000 cu. ft., sand at 2,950-88 ft.

In Washington County, Liberty Township, Best Run Oil & Gas Co.'s No. 2 M. E. Martin, Section 21, is a small gas well in the Germantown sand, depth 1,175 ft.

Completions in the state received too late for publication last week, were as follows:

In Mayfield village, Cuyahoga County, Benedum-Trees' No. 1 A. Goodman, Lot 45, Tract 1, is a gas well with 470,000 cu. ft., open flow; Newburg sand at 2,807-34 ft.

In Fairfield County City Natural Gas Co. had two Clinton sand completions in Berne Township, No. 1 J. J. Stuckey, Section 33, open flow, 70,000 cu. ft. of gas, sand at 2,066-84 ft.; Pleasant Township, No. 1 F. H. Webb, Section 33, dry, depth 2,202 ft.

In Guernsey County, Millwood Township, Ohio Fuel Gas Co.'s No. 2 Charles Smith, Section 22, started with 60,000 cu. ft. of gas from the Berea at 1,608-13 ft.

In Knox County, Pike Township, Ohio Fuel Gas Co.'s No. 1 S. J. Fields, Section 23, gaged 550,000 cu. ft. of gas in the Clinton at 2,480-84 ft.

In the Newark field, Licking County, Allen Willey and others' No. 1 Charles Spencer, in the fourth quarter of Newark Township, gaged 2,000,000 cu. ft. of gas, open flow, from Clinton sand at 2,328-53 ft. In Newton Township C. O. Moore and others' No. 1 George Norman, northeast corner of first quarter, had an open flow of 950,000 cu. ft. of gas, Clinton at 2,546-76 ft.

In the Chatham Township field, Medina County, Preston Oil Co.'s No. 19 Susan Horman, Lot 4, Tract 10, pumped 30 bbl. of oil the first 24 hours after a shot in Berea sand at 253-324 ft. Edson & Son completed Nos. 8 and 9 Samuel Brant, Lot 2, Tract 16, with initial 24-hour productions, after the shot, of 5 and 10 bbl., respectively, at depths of 520 ft., and 494 ft. Defusto & Sawinger's No. 1 George L. Alles, Lot 3, Tract 8, initial production 2 bbl. of oil from Berea at 330-409 ft. A. H. Moore and others' No. 1 E. S. Kulp, Tract 3, Lot 11, dry, depth 580 ft.

In Noble County, Seneca Township, Chaseville Oil & Gas Co.'s No. 1 George Craft, Section 30, has 100,000 cu. ft. of gas open flow in the Berea at 1,619-27 ft.

In Muskingum County Atha Co.'s No. 2 C. S. Sherman had 200,000 cu. ft. of gas in the Clinton and a showing of oil in the Medina. It was completed as a gas well in the Clinton without a shot, depth at 4,138 ft. In Brush Creek Township Gas Producing Co.'s No. 1 T. B. Weaver, Section 24, dry through the Medina, depth 3,890 ft.

Michigan Fields

(Continued from Page 116)

Nichol, SE NW NE, rating 140 bbl. from 1,879 ft., after acidizing.

Shiawassee County

Antrim (5n-3e) — Coryell Oil Co. abandoned No. 1 J. J. Havilan, SE SE SE Section 31, as a dry hole at 882 ft.

Van Buren County

Columbia Township (1s-15w)—Rex Oil & Gas Co.'s No. 2 H. Stockton, SW SW SE Section 2, was good for 18 bbl. a day, naturally, at 1,171 ft.

Porter Township (4s-13w)—R. T. & E. Corp.'s No. 2 Stanley Bray, C S½ N½ SE Section 19, was dry and abandoned at 1,230 ft.

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Southwest Texas District

By F. L. SINGLETON

Operators Hope to Link Wade City and Orange Grove Pools

CORPUS CHRISTI, Tex., May 20.—An expansion of drilling activity in the Wade City-Orange Grove area, Jim Wells County, is anticipated as preparations were made to test H. H. Howell's No. 1 Emil Schrade, which has shown promise of linking the two pools as the result of a drill-stem test. Sand showing oil and gas was cored at 5,078-94 ft., the total depth, and 5½-in. casing was cemented on bottom after the well flowed pipeline oil, and built up 250 lb. working pressure on a 16-minute drill-stem test at 5,082-94 ft.

The well is located in the Casa Blanca grant, about 1 mile north of Henshaw Brothers' No. 1 Blaske, discovery well of the Orange Grove field, and about the same distance southeast of the nearest production in the Wade City field. The sand section is believed to be the same as in the Blaske producer, although the pay was cored several feet higher. The Blaske well was completed the previous week through perforated casing at 5,100-03 ft., and continues to make from 15 to 20 per cent salt water, which indicates that the discovery well may be on the edge of the southern part of the structure. Production in the Wade City field is from two sands at approximately 4,800 ft. and 4,900 ft., and an attempt is being made to determine whether or not the deeper pay at Orange Grove will extend as far north as Wade City. In view of recent developments, Rodney DeLange and others have taken over Windsor Oil Co.'s No. 1 Kusel, a recent dry hole, 1 mile north of the field, and are deepening the well to the new pay.

A 6,500-Ft. Test

Location for a 6,500-ft. wildcat in the county was announced as H. H. Howell moved in material for No. 1 San Antonio Joint Stock Land Bank, about 5 miles south of Bentonville and in Block 14, Section 9, of the Scott resubdivision of the Benton pasture, M. Lopez grant.

Approximately 1½ miles east of the Flour Bluff field and in Laguna Madre Bay, Nueces County, Humble Oil & Refining Co. was preparing to test No. 1-D State. Seven-inch casing was cemented at 6,945 ft. preparatory to testing two sands cored at 6,779-96 ft., and at 6,852-63 ft. Side-wall cores of both sand sections showed from 2 to 4 per cent saturation, and the well is expected to make a good producer. No drill-stem test was attempted because of the danger of pollution of waters in the bay. The well is located on the downthrow of a major fault flanking the east side of the field and it is possible that the completion will open a producing area separated from the field proper by a graben condition.

In the Robstown area, Nueces County, Texas Conservative Oil Co. is moving in material for No. 1 T. H. Isensee, Lot 10, Paul's subdivision "D" of the Driscoll ranch. The well is being drilled on a farmout lease from Humble Oil & Refining Co., about 1½ miles east of Richardson Petroleum Co.'s No. 1 Studer, completed the previous week for a good producer through perforated casing at 5,195-5,207½ ft. and 4,583-90 ft.

Wildcat operations as well as development in proven fields continue to attract much attention to Victoria County. Colton & Colton's No. 1 Etta Terrell, 2½ miles southwest of the Cologne field and 12 miles south of Victoria, looms as a probable pool opener as a drill-stem test at 5,282-89 ft. is reported to have recovered 225 ft. of pipe-line oil in 6 minutes. In the southern part of the county S. J. Ryan's No. 1 Bankers Mortgage Co., A. Esparza Survey, is preparing to core at 5,900 ft. after an electrical survey is reported to have shown the well checking from 80 to 98 ft. structurally high.

In the Coleto Creek field, Victoria County, A. Plummer's No. 2-B Terrell, R. Manchola Survey, cored a sand, showing oil, at 2,790-2,829 ft., and 5½-in. casing was cemented at 2,810 ft. This is the first well drilled in the field in several months. In the Victoria field Magnolia Petroleum Co.'s No. 3 Simon recovered 240 ft. of pipe-line oil on a 15-minute drill-stem test at 3,020-54 ft., the total depth, and 7-in. casing was cement on bottom. In the Keeran field Gulf Oil Corp.'s No. 18 Keeran, 1 mile north of production, has cemented casing for a production test at 4,922 ft. after the well had been drilled to a total depth of 6,449 ft.

Drilled to 9,501 Ft.

Sinclair Prairie Oil Co.'s No. 1 Calaghan ranch, a Tertiary Wilcox test in Webb County, was drilled to 9,501 ft., and after cutting a series of side-wall cores the hole was plugged back to 5,900 ft. and a drill-stem test was scheduled to be made. Another Wilcox test was marked off the list as Edwin M. Jones abandoned No. 1 West, in Live Oak County, at a total depth of 10,839 ft. after a series of drill-stem tests in the upper and lower formation of the section showed nothing but salt water.

In the same county and in the Carolina-Texas field Carter & Rubsamen's No. 13 Houston Oil Co., Survey 268, perforated casing at 5,049-56 ft., and the well showed salt water with 1,400 lb. working pressure. The perforations were squeezed off and another test will be made.

In the Glen field, Webb County, Transwestern Oil Co.'s No. 1 Bruni, 934 ft. southwest of the discovery well, cored hard sand with an oil odor at 2,163-66 ft., Caprock at 2,155-70 ft., and sand with an oil odor at 2,170-73 ft. The hole is bottomed in shale, cored at 2,173-74 ft., and the well is shut down for orders.

Along the Balcones fault-line district and located in the Batesville area, Zavala County, H. F. Wilcox Oil & Gas Co. was preparing to test No. 6 Gilliams. The hole is bottomed in Edwards lime at 3,919 ft., and casing was cemented to test a showing of oil logged in the Edwards at 3,919-20 ft., and the Doble lime at 3,920-21 ft. The well is in Survey 12, northwest of the discovery well, which was completed for a large producer in 1937. The well later went dead, and the company has drilled several failures in the area in an attempt to revive production.

SOUTHWEST TEXAS COMPLETIONS IN PROVEN FIELDS

Aransas-San Patricio Counties

McCampbell field: Bay-Tex Oil Corp.'s No. 1 Davenport-Wilson, perforated casing 7,114-23 ft., 173 bbl., ⅞-in. choke.

Caldwell County

Dale field: Ralph Ogden's No. 7 Talley, 2,305 ft., 89 bbl., 16 hours, open tubing.

Duval County

Cedro Hill field: Magnolia Petroleum Co.'s No. 2 Duval County Ranch Co., sand 1,430-35 ft., 45 bbl., jetting. Chiltipin field: Graham Brothers' No. 1 Graham, 5,035 ft., dry and abandoned. Driscoll field: Continental Oil Co.'s No. 49-A Driscoll, perforated casing 3,330-42 ft., 140 bbl., ¼-in. choke. Hoffman field: Argo Oil Co.'s No. 1-B Rodden, 2,708 ft., dry and abandoned. Magnolia Petroleum Co.'s No. 9 Well, perforated casing 2,653-63 ft., 120 bbl., ½-in. choke. Muralla field: Sun Oil Co.'s No. 3 Valerio, 4,753 ft., dry and abandoned. Peters field: C. Andrade's No. 1 Peters, 2,775 ft., dry and abandoned. Piedra de Lumbre field: Government Wells Oil Co.'s No. 1 Lundell, sand 1,346-59½ ft., gas well. Rancho Solo field: Milam Drilling Co.'s No. 2 Peters, 1,890 ft., 75 bbl., pumping. Marshall Purvis and others' No. 3 Peters, 1,902 ft., dry and abandoned.

Guadalupe County

Elm Creek field: C. A. Euton and others' No. 1 Schievelbein, sand 786-809 ft., 7 bbl., pumping. Ben Robertson's No. 1 Dieckow, sand 830-80 ft., 5½ bbl., pumping. E. A. Weyel's No. 4 Mattke, sand 650-75 ft., 4 bbl., pumping.

Hidalgo County

Samfordyce field: Royal Oil & Gas Co.'s No. 1-A Chapa, perforated casing 4,122-26 ft., 120 bbl., ¼-in. choke.

Jim Hogg-Brooks Counties

Kelsey field: Humble Oil & Refining Co.'s No. 63 McGill, 4,746 ft., dry and abandoned.

Jim Wells County

Ben Bolt field: Bridwell Oil Co.'s No. 1-B Hoffman, perforated casing 5,223-32 ft., 298 bbl., ⅞-in. choke. Foster Petroleum Co.'s No. 1 Startz, 6,140 ft., dry and abandoned. Heep Oil Corp.'s No. 1 Anderson, 5,712 ft., dry and abandoned. Premont field: Al Parker's No. 1 Seeligson, 2,384 ft., temporarily abandoned. South Alfred field: Rowan & Hope's No. 3 Adams, sand 4,720-23 ft., 165 bbl., ½-in. choke. Wade City field: Rodney DeLange's No. 7 McNeill, perforated casing 4,939-43 ft., 107 bbl., ⅞-in. choke. Smith & Mowwinkle, perforated casing 4,918-26 ft., 342 bbl., ⅞-in. choke.

Live Oak County

White Creek field: Clark Drilling Co.'s No. 1 Loughridge, 1,545 ft., 15 bbl., pumping.

Nueces County

South Ciara Driscoll field: Texas Co.'s No. 2 Richardson, perforated casing 3,865-72 ft., 3 bbl. distillate, ⅛-in. choke.

Refugio County

La Rosa field: Hewitt & Dougherty's No. 15-B Rooke, 5,750 ft., dry and abandoned.

San Patricio County

East White Point field: Standard of Kansas' No. 2 Sparks, sand 5,664-79 ft., 140 bbl., ¼-in. choke. W. R. R. Oil Co.'s No. 2-975 State, perforated casing 5,558-70 ft., 137 bbl., 7/64-in. choke. Plymouth field: Eaves Oil Co.'s No. 2 Dimmick, perforated casing 5,647-52 ft., 163 bbl., 5/32-in. choke.

Starr County

Margo field: A. L. Bone and others' No. 2 Garcia, 418 ft., dry and abandoned. Rincon field: W. R. Davis Co., Inc.'s No. 17-B Slick, sand 4,251-59 ft., 248 bbl., ¼-in. choke. W. R. Davis Co., Inc.'s No. 22-B Slick, perforated casing 4,083-4,108 ft., 288 bbl., ¼-in. choke. Sun field: Magnolia Petroleum Co.'s No. 1 Juarez, perforated casing 5,152-55 ft., 95 bbl., 7/64-in. choke. Sun Oil Co.'s No. 7 Olivares, 4,952 ft., 260 bbl., ⅞-in. choke. Sun Oil Co.'s No. 1-B Speer, perforated casing 4,924-34 ft., 262 bbl., ⅞-in. choke.

Victoria County

McFaddin field: Houston Oil Co.'s No. 5 Fagan, 4,413 ft., 126 bbl., 10/64-in. choke. Victoria field: Luling Oil & Gas Co.'s No. 1 Miller, 3,071 ft., dry and abandoned. Sewell & Boyles' No. 1 Vogt, 3,107 ft., dry and abandoned.

West Cole Field

West Cole field: V. G. Schimmel's No. 3-B Benavides, 2,488 ft., dry and abandoned.

Summary of Operations, All Fields for April

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Eastern fields	451	1,326	33	41
Lima	1	0	1	0
Central Ohio	88	467	27	30
Michigan	96	9,726	33	0
Indiana	31	1,265	15	4
Eastern Kentucky	12	4	0	11
Western Kentucky	32	478	21	0
Illinois	290	157,700	38	4
Missouri	4	0	3	1
Kansas	146	37,667	21	3
Oklahoma	156	20,724	59	13
North Cent. Texas	293	94,491	105	3
West Texas	204	164,325	14	0
Texas Panhandle	54	15,328	1	12
East Texas	23	1,115	0	0
East Cent. Texas	21	3,079	7	2
East Texas border	3	50	0	1
Southwest Texas	187	12,666	75	4
Gulf Coast Texas	106	22,487	25	6
Gulf Coast La.	96	24,243	21	2
Mississippi	24	9,795	11	0
Arkansas	16	3,780	4	1
North Louisiana	45	4,770	7	3
Montana	14	1,568	0	0
Wyoming	12	6,505	1	0
Utah	1	0	0	1
New Mexico	76	19,688	11	2
Iowa	1	0	1	0
Total April	2,483	613,247	534	144
Total March	2,261	565,332	491	143
Difference	222	47,915	43	1

Rigs and Wells Drilling

	Rigs	Drlg.	Ttl.
Eastern fields	121	481	602
Lima	0	6	6
Central Ohio	48	123	171
Michigan	38	145	183
Indiana	9	66	75
Eastern Kentucky	7	23	30
Western Kentucky	2	55	57
Illinois	65	393	458
Missouri	1	14	15
Iowa	0	1	1
Nebraska	0	15	15
Kansas	47	255	302
Oklahoma	41	298	339
North Central Texas	134	298	432
West Texas	64	253	317
Texas Panhandle	35	128	163
East Texas	21	31	52
East Central Texas	6	34	40
East Texas border	4	20	24
Southwest Texas	29	159	188
Gulf Coast Texas	21	111	132
Gulf Coast Louisiana	34	126	160
Mississippi	6	36	42
Arkansas	4	28	32
North Louisiana	7	59	66
Alabama	0	6	6
Florida	0	6	6
Georgia	0	4	4
Arizona	0	7	7
Montana	4	50	54
Wyoming	13	62	75
Colorado	2	29	31
New Mexico	25	131	156
Utah	2	5	7
Total April	790	3,458	4,248
Total March	773	3,475	4,248
Difference	17	17	0

KANSAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Barber	1	804	0	0	1	4
Barton	27	6,080	4	0	7	30
Butler	5	215	2	0	1	13
Cowley	6	257	4	0	5	20
Cloud	0	0	0	0	0	1
Douglas	0	0	0	0	0	1
Ellis	17	4,962	1	0	5	22
Ellsworth	14	3,953	1	0	4	18
Graham	0	0	0	0	0	1
Greenwood	4	65	2	0	3	12
Jefferson	0	0	0	0	0	1
Johnson	1	0	0	1	0	1
Kearny	0	0	0	0	1	0
Kingman	0	0	0	0	1	2
Leavenworth	0	0	0	0	0	1
Marion	1	0	1	0	0	8
McPherson	11	3,496	0	0	3	22
Miami	1	0	0	1	0	0
Pawnee	0	0	0	0	1	1
Phillips	0	0	0	0	0	1
Pratt	0	0	0	0	1	4
Reno	0	0	0	0	0	3
Rice	14	3,356	2	0	5	21
Rooks	3	133	1	0	1	5
Russell	33	12,856	1	0	6	42
Sedgwick	1	0	1	0	0	3
Stafford	4	1,472	0	0	2	14
Stevens	1	0	0	1	0	2
Sumner	1	18	0	0	0	0
Trego	1	0	1	0	0	1
Woodson	0	0	0	0	0	1
Ttl. Apr.	146	37,667	21	3	47	255
Ttl. Mar.	125	37,125	22	3	46	220
Difference	21	542	1	0	1	35

OKLAHOMA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Atoka	1	0	1	0	0	2
Beckham	0	0	0	0	0	2
Caddo	8	2,956	3	0	0	18
Carter	2	53	1	0	0	10
Choctaw	0	0	0	0	0	2
Coal	1	15	0	0	0	1
Comanche	0	0	0	0	0	5
Cotton	0	0	0	0	0	1
Creek	16	306	6	1	5	24
Dewey	0	0	0	0	0	1
Garfield	0	0	0	0	0	2
Grady	2	143	0	0	0	4
Grant	0	0	0	0	0	1
Hughes	7	28	6	0	1	15
Jackson	9	595	3	0	0	11
Jefferson	0	0	0	0	0	1
Kay	1	20	0	0	0	5
Kingfisher	0	0	0	0	0	2
Kiowa	2	767	1	0	0	5
Lincoln	6	1,087	2	0	1	6
Logan	2	81	1	0	1	2
Marshall	0	0	0	0	0	3
McClain	5	3,957	1	0	0	1
Muskogee	2	0	2	0	0	1
McIntosh	0	0	0	0	0	1
Noble	0	0	0	0	1	3
Okfuskee	8	1,763	3	0	3	10
Oklahoma	3	1,254	1	0	1	11
Okmulgee	12	26	3	4	2	9
Osage	12	273	4	2	3	9
Pawnee	3	0	2	1	0	10
Payne	0	0	0	0	1	4
Pontotoc	11	1,644	3	0	2	10
Pottawatomie	14	2,575	3	0	6	29
Seminole	10	2,015	2	1	5	17
Stephens	5	1,201	2	0	1	7
Texas	1	0	0	1	0	1
Tillman	0	0	0	0	0	3
Tulsa	6	5	3	2	2	9
Wagoner	7	0	6	1	1	15
Washita	0	0	0	0	0	1
Miscellaneous	0	0	0	0	5	34
Ttl. Apr.	156	20,724	59	13	41	298
Ttl. Mar.	134	12,067	54	11	39	317
Difference	22	8,657	5	2	2	19

WEST TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Andrews	5	8,003	1	0	1	3
Crane	9	16,881	0	0	1	19
Concho	1	0	1	0	0	1
Crockett	2	1,613	1	0	0	8
Dawson	0	0	0	0	0	1
Ector	58	52,623	1	0	22	65
El Paso	0	0	0	0	0	1
Gaines	15	9,441	0	0	1	11
Hockley	5	3,977	0	0	1	16
Howard	4	360	2	0	0	1
Hudspeth	0	0	0	0	0	2
Loving	3	172	2	0	0	1
Lynn	1	0	1	0	0	0
McCulloch	0	0	0	0	0	1
Mitchell	0	0	0	0	0	3
Nolan	0	0	0	0	0	1
Pecos	10	2,148	1	0	2	16
Presidio	0	0	0	0	0	1
Reeves	1	0	1	0	0	1
Schleicher	1	0	1	0	0	2
Scurry	10	1,202	0	0	4	8
Stonewall	0	0	0	0	0	2
Terrell	0	0	0	0	0	2
Terry	1	0	1	0	0	2
Tom Green	0	0	0	0	0	2
Upton	3	1,252	0	0	6	5
Ward	13	6,271	1	0	4	22
Winkler	4	1,148	0	0	1	7
Yoakum	58	59,234	0	0	21	49
Ttl. Apr.	204	164,325	14	0	64	253
Ttl. Mar.	169	146,637	10	2	50	275
Difference	35	17,688	4	2	14	22

WEST CENTRAL AND NORTH TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Archer	65	42,791	12	0	27	47
Brown	3	0	3	0	3	8
Baylor	2	1,376	0	0	2	3
Callahan	10	117	6	0	12	9
Clay	25	896	21	0	5	14
Coleman	6	778	1	0	0	8
Comanche	2	15	1	0	3	4
Cooke	19	5,783	2	0	9	18
Coryell	0	0	0	0	0	1
Denton	0	0	0	0	0	2
Erath	0	0	0	0	1	2
Eastland	0	0	0	0	1	5
Fannin	0	0	0	0	1	1
Fisher	0	0	0	0	0	1
Foard	2	147	0	0	0	1
Grayson	0	0	0	0	1	3
Hamilton	0	0	0	0	0	3
Hardeman	0	0	0	0	0	1
Haskell	0	0	0	0	0	1
Hood	1	0	1	0	0	0
Jack	10	4,137	1	0	5	9
Johnson	0	0	0	0	0	1
Jones	16	2,948	5	0	8	20
Montague	12	3,478	6	0	13	17
Palo Pinto	3	0	1	2	1	4
Parker	0	0	0	0	0	1
Runnels	0	0	0	0	0	3
Shackelford	20	1,072	10	0	4	7
Stephens	4	3,080	1	0	2	9
Tarrant	0	0	0	0	0	2
Taylor	1	0	1	0	0	4
Throckmorton	1	0	1	0	0	3
Wichita	59	24,466	16	0	26	56
Wilbarger	9	1,958	1	0	5	6
Wise	1	0	1	0	0	0
Young	22	1,449	14	1	7	24
Ttl. Apr.	293	94,491	105	3	134	298
Ttl. Mar.	257	79,702	99	4	210	294
Difference	36	14,789	6	1	76	4

SOUTHWEST TEXAS

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Agua Dulce	1	12	0	0	0	4
Adami	10	278	1	0	0	5
Ben Bolt	4	1,093	0	0	1	4
Bruni	1	0	1	0	1	0
Callihan	1	0	1	0	0	0
Chiltipin	0	0	0	0	0	1
Chacon Lake	1	2	0	0	1	1
Carolina-Texas	0	0	0	0	0	1
Charco Redando	1	0	1	0	0	0
Clara Driscoll	1	0	0	1	0	2
Carroll	0	0	0	0	0	1
Cedro Hill	5	145	0	0	1	2
Colorado	5	755	0	0	1	1
Comitas	2	13	0	0	0	1
Cedar Creek	1	0	1	0	0	0
Coleto Creek	0	0	0	0	1	0
Dale	2	245	0	0	0	0
Darst Creek	1	40	0	0	0	0
Driscoll	0	0	0	0	0	1
East Mathis	1	37	0	0	0	0
East Placedo	0	0	0	0	1	0
East White Point	7	848	0	0	2	8
Escobas	3	9	2	0	0	1
Eckert	1	0	1	0	0	0
East Premont	0	0	0	0	0	1
Elm Creek	1	0	1	0	1	4
Fagan	1	0	1	0	0	1
Flour Bluff	1	0	1	0	0	1
Govt. Wells	1	0	1	0	0	0
Heyser	3	268	0	0	1	0
Hoffman	3	50	2	0	1	2
Kelsey	3	341	0	0	0	2
Keeran	1	49	0	0	1	1
La Rosa	2	1,787	0	0	1	0
La Reforma	0	0	0	0	0	1
Longhorn	1	108	0	0	0	1
Luling	1	15	0	0	0	0
Minnie Bock	5	206	1	0	0	0
Margo	0	0	0	0	0	1
McCampbell	9	837	0	1	1	10
McFaddin	2	385	0	0	0	1
Mirando Valley	7	232	2	0	0	3
Midway	1	30	0	0	0	2
Muralla	1	0	1	0	0	2
No. Telferner	1	25	0	0	0	0
NW. Odem	1	35	0	0	0	0
Peters	2	5	1	0	1	0
Piedra De Lumbre	1	0	1	0	1	0
Piedra Pintas	2	0	2	0	0	0
Pettus	0	0	0	0	0	1
Premont	4	23	0	0	1	2
Pearsall	0	0	0	0	0	1
Plymouth	2	146	0	0	0	2
Rancho Solo	3	135	1	0	0	1
Refugio	1	0	1	0	1	0
Reynolds	1	108	0	0	0	1
Rockdale	1	0	1	0	0	0
Richard King	1	157	0	0	0	1
Rincon	5	886	1	0	0	6
Salt Flats	2	236	0	0	0	1
Samfordyce	0	0	0	0	0	2
Saxet	0	0	0	0	0	2
So. Clara Driscoll	1	25	0	0	0	2
So. Alfred	1	48	0	0	0	3
Seven Sisters	1	95	0	0	0	0
So. Alice	1	0	0	1	0	0
Stratton	1	60	0	0	1	1
Sun	3	336	1	0	1	3
So. Calliham	2	0	1	1	0	0
S. Ricaby	1	0	1	0	1	0
Thomaston	1	140	0	0	0	0
Tarancahuas	1	202	0	0	0	0
Tomoconnor	2	1,169	0	0	0	1
Victoria	4	72	3	0	1	0
Volpe	3	200	1	0	0	1
Wade City	4	732	0	0	1	4
West Tuleta	0	0	0	0	0	1
West Cole	2	46	1	0	0	2
White Creek	0	0	0	0	0	1
Miscellaneous	41	0	41	0	5	54
Ttl. Apr.	187	12,666	75	4	29	159
Ttl. Mar.	193	12,241	71	7	35	174
Difference	6	425	4	3	6	15

TEXAS GULF COAST

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ace	0	0	0	0	0	1
Anahuac	5	2,962	0	0	0	3
Anchor	4	213	2	0	0	3
Batson	1	18	0	0	1	0
Bay City	0	0	0	0	0	4
Barbers Hill	1	597	0	0	0	1
Buckeye	0	0	0	0	0	1
Caplen	2	0	0	2	2	0
Cedar Point	1	144	0	0	0	1
Clear Lake	4	432	0	1	0	2
Clam Lake	1	152	0	0	0	0
Danbury	0	0	0	0	0	2
Dickinson	1	0	0	1	0	3
Esperson	0	0	0	0	0	2
Fannett	0	0	0	0	0	1
Fairbanks	1	114	0	0	0	3
Friendswood	4	1,159	2	0	0	2
Greens Lake	1	311	0	0	1	0
Hardin	2	404	0	0	2	0
Hastings	3	1,204	0	0	1	1
Hilje	0	0	0	0	0	1
Humble	1	50	0	0	0	1
League City	1	235	0	0	0	1
La Belle	1	51	0	0	1	0
Lovells Lake	5	641	0	1	1	2
Manvel	2	882	0	0	0	1
Martha	0	0	0	0	0	1
Mauritz	1	165	0	0	0	0
Markham	1	0	1	0	1	0
North Cheek	2	0	2	0	0	0
Old Ocean	1	326	0	0	0	2
Orange	1	671	0	0	0	2
Orchard	1	32	0	0	0	1
Pickett Ridge	0	0	0	0	0	1
Port Neches	1	334	0	0	0	2
Rockland	1	50	0	0	1	0
Rosenberg	1	0	1	0	0	0
Seabreeze	0	0	0	0	0	2
Segno	3	1,678	0	0	0	4
Silsbee	0	0	0	0	1	1
S. Houston	0	0	0	0	0	1
Spurger	1	0	0	1	0	2
Sour Lake	1	30	0	0	0	0
South Cotton Lake	2	268	0	0	0	2
Thompson	7	1,521	1	0	2	4
Tomball	1	24	0	0	0	1
Turtle Bay	0	0	0	0	0	1
Van Vleek	0	0	0	0	0	1
W. Beaumont	1	32	0	0	1	0
West Ranch	16	6,511	1	0	3	10
W. Columbia	2	642	0	0	0	4
Withers	6	634	0	0	1	3
Miscellaneous	15	0	15	0	2	24
Ttl. Apr.	106	22,487	25	6	21	111
Ttl. Mar.	125	28,854	21	4	23	112
Difference	19	6,367	4	2	2	1

TEXAS PANHANDLE

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Carson	10	2,252	0	4	8	16
Childress	0	0	0	0	0	1
Cottle	0	0	0	0	0	1
Deaf Smith	0	0	0	0	0	1
Dickens	0	0	0	0	0	1
Gray	13	2,816	0	1	8	44
Hall	0	0	0	0	0	1
Hutchinson	22	9,988	0	1	14	41
Moore	6	0	0	6	4	6
Motley	0	0	0	0	0	1
Ochiltree	0	0	0	0	0	1
Potter	1	0	1	0	0	1
Sherman	0	0	0	0	0	1
Swisher	0	0	0	0	0	1
Wheeler	2	272	0	0	1	11
Ttl. Apr.	54	15,328	1	12	35	128
Ttl. Mar.	33	8,369	1	6	34	92
Difference	21	6,959	0	6	1	36

EAST CENTRAL AND EAST TEXAS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Anderson	6	408	0	2	0	6
Angelina	0	0	0	0	1	0
Bowie	0	0	0	0	0	1
Camp	0	0	0	0	0	1
Cherokee	0	0	0	0	1	0
Falls	0	0	0	0	0	1
Fannin	0	0	0	0	1	1
Franklin	5	1,820	0	0	0	2
Freestone	1	200	0	0	1	1
Gregg	14	672	0	0	8	11
Henderson	2	0	2	0	0	1
Hopkins	1	0	1	0	0	0
Houston	0	0	0	0	2	7
Kaufman	1	0	1	0	0	2
Leon	0	0	0	0	1	1
Limestone	2	0	2	0	0	0
McLennan	0	0	0	0	0	1
Nacogdoches	0	0	0	0	0	1
Navarro	1	0	1	0	0	3
Rusk	2	104	0	0	6	9
Robertson	0	0	0	0	0	1
Smith	3	166	0	0	4	8
Titus	2	651	0	0	0	2
Upshur	4	173	0	0	2	3
Van Zandt	0	0	0	0	0	2
Ttl. Apr.	44	4,194	7	2	27	65
Ttl. Mar.	42	2,837	6	5	16	57
Difference	2	1,357	1	3	11	8

EAST TEXAS BORDER

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bowie	0	0	0	0	0	1
Cass	0	0	0	0	0	3
Harrison	0	0	0	0	0	3
Marion-Rodessa	0	0	0	0	0	2
Marion-Other	2	50	0	0	3	9
Shelby	1	0	0	1	1	2
Ttl. Apr.	3	50	0	1	4	20
Ttl. Mar.	6	375	1	0	0	14
Difference	3	325	1	1	4	6

*Gas production: Shelby County, 88,000 cu. ft.

ARKANSAS

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Calhoun	1	0	1	0	0	0
Clark	0	0	0	0	0	3
Columbia	10	3,265	2	0	0	6
Faulkner	0	0	0	0	0	1
Hot Springs	0	0	0	0	0	1
Howard	0	0	0	0	1	0
Lafayette	1	240	0	0	0	2
Lonoke	0	0	0	0	0	3
Miller-Rodessa	0	0	0	0	1	0
Miller-Other	0	0	0	0	0	1
Nevada	0	0	0	0	0	1
Ouachita	0	0	0	0	0	3
Paluski	0	0	0	0	0	1
Saline	0	0	0	0	1	1
Sevier	0	0	0	0	0	1
St. Francis	0	0	0	0	1	0
Union	4	275	1	1	0	4
Ttl. Apr.	16	3,780	4	1	4	28
Ttl. Mar.	19	3,225	7	0	5	30
Difference	3	445	3	1	1	11

*Gas production: Union County, 1,000,000 cu. ft.

NORTH LOUISIANA

County—	Comp.	Prod.	Dry	Gas*	Rgs.	Dlg.
Bienville	0	0	0	0	0	1
Bossier	2	215	0	1	1	3
Caddo-Rodessa	1	335	0	0	0	0
Caddo-Other	27	2,790	2	0	2	26
Caldwell	1	0	1	0	0	0
Catahoula	0	0	0	0	0	1
Claiborne	2	235	1	0	0	1
De Soto	1	150	0	0	0	2
Grant	1	75	0	0	0	2
La Salle	2	280	0	0	1	7
Madison	1	0	1	0	0	0
Morehouse	0	0	0	0	0	1
Natchitoches	1	0	1	0	0	1
Red River	0	0	0	0	0	1
Sabine	2	25	1	0	1	8
Tensas	0	0	0	0	0	1
Union	2	0	0	2	1	1
Webster	2	665	0	0	0	3
West Carroll	0	0	0	0	1	0
Ttl. Apr.	45	4,770	7	3	7	59
Ttl. Mar.	56	5,081	7	5	5	53
Difference	11	311	0	2	2	6

*Gas production: Bossier Parish, 210,000,000 cu. ft.; Union Parish, 3,000,000 cu. ft.

COASTAL LOUISIANA

Field—	Comp.	Prod.	Abd.	Gas	Rgs.	Dlg.
Abbeville	0	0	0	0	0	1
Anse La Butte	3	291	2	0	1	1
Bancroft	2	120	1	0	0	1
Barataria	2	653	0	0	2	1
Bateman Lake	1	0	0	1	0	1
Bayou Blue	0	0	0	0	0	2
Bayou De Glaize	1	345	0	0	1	0
Bay St. Elaine	0	0	0	0	1	0
Bayou Pigeon	0	0	0	0	1	0
Black Bayou	0	0	0	0	1	0
Caillou Island	1	32	0	0	0	1
Charenton	8	320	2	0	1	3
Choctaw	0	0	0	0	0	1
Chalkley	2	666	0	0	1	3
Chacahoula	1	816	0	0	0	2
Cheneyville	2	344	1	0	2	1
Cameron Meadows	1	317	0	0	1	0
Darrow	0	0	0	0	0	1
Dog Lake	1	33	0	0	0	1
East Baton Rouge	4	820	0	0	2	1
Eola	7	4,129	0	0	2	7
Edgerly	0	0	0	0	0	1
Fausse Point	1	0	1	0	0	2
Gibson	0	0	0	0	0	1
Grand Bay	2	1,301	0	0	0	3
Golden Meadow	13	2,134	1	1	2	14
Gillis	1	0	1	0	0	3
Garden Island	2	702	0	0	0	2
Grand Lake	2	390	0	0	0	2
Hackberry	3	1,127	1	0	0	4
Happytown	0	0	0	0	0	1
Horseshoe Bayou	0	0	0	0	0	1
Jeanerette	0	0	0	0	0	1
Jennings	3	1,160	0	0	0	4
Jefferson Island	0	0	0	0	0	2
La Place	1	72	0	0	0	0
La Fourche Crossing	1	292	0	0	1	1
Lafitte	2	1,369	0	0	1	2
Lake Pelto	1	0	1	0	0	1
Leesville	0	0	0	0	1	0
Neale	0	0	0	0	0	1
Niblett Farms	1	100	0	0	0	0
N. Crowley	1	799	0	0	0	1
N. Elton	0	0	0	0	1	0
New Iberia	2	763	0	0	2	4
Paradis	0	0	0	0	0	2
Port Barre	1	320	0	0	1	2
Plumb Bob	0	0	0	0	0	1
Potash	1	384	0	0	0	1
Quarantine Bay	2	925	0	0	0	1
Raceland	1	861	0	0	0	1
S. Roanoke	0	0	0	0	0	2
Starks	0	0	0	0	0	2
Sulphur	1	336	0	0	0	2
Sweet Lake	0	0	0	0	0	1
S. Jennings	1	150	0	0	2	1
Valentine	1	225	0	0	0	0
Vermilion Bay	0	0	0	0	0	1
Villa Platte	6	1,947	0	0	3	7
Venice	0	0	0	0	0	2
W. Lake Verrett	0	0	0	0	0	1
W. Cote Blanche	0	0	0	0	0	1
W. Gueydan	0	0	0	0	0	1
White Castle	0	0	0	0	0	2
Woodlawn	0	0	0	0	0	1
Miscellaneous	10	0	10	0	4	15
Ttl. Apr.	96	24,243	21	2	34	126
Ttl. Mar.	92	25,052	18	1	23	122
Difference	4	809	3	1	11	4

MISSISSIPPI

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg
Attala	0	0	0	0	0	2
Choctaw	0	0	0	0	0	1
Clarke	0	0	0	0	1	1
Copiah	1	0	1	0	0	1
Hinds	0	0	0	0	0	2
Holmes	1	0	1	0	1	2
Humphreys	1	0	1	0	0	2
Issequena	0	0	0	0	0	1
Itawamba	0	0	0	0	0	1
Kemper	0	0	0	0	0	1
Lamar	0	0	0	0	0	1
Madison	2	0	2	0	0	1
Monroe	0	0	0	0	0	1
Oktibbeha	0	0	0	0	1	0
Pike	0	0	0	0	0	1
Prentiss	0	0	0	0	0	1
Scott	0	0	0	0	1	0
Sharkey	0	0	0	0	0	1
Simpson	1	0	1	0	0	0
Stone	0	0	0	0	0	1
Warren	1	0	1	0	0	1
Wayne	0	0	0	0	0	1
Yalobusha	1	0	1	0	0	1
Yazoo	16	9,795	3	0	2	12
Ttl. Apr.	24	9,795	11	0	6	36
Ttl. Mar.	12	5,385	4	0	3	35
Difference	12	4,410	7	0	3	1

GEORGIA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Clinch	0	0	0	0	0	2
Dade	0	0	0	0	0	1
Montgomery	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	0	4
Ttl. Mar.	0	0	0	0	0	3
Difference	0	0	0	0	0	1

ALABAMA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Choctaw	0	0	0	0	0	1
Greene	0	0	0	0	0	1
Houston	0	0	0	0	0	1
Lawrence	0	0	0	0	0	1
Marion	0	0	0	0	0	1
Mobile	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	0	6
Ttl. Mar.	0	0	0	0	0	4
Difference	0	0	0	0	0	2

FLORIDA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Dade	0	0	0	0	0	1
Levy	0	0	0	0	0	2
Nassau	0	0	0	0	0	1
Suwannee	0	0	0	0	0	2
Ttl. Apr.	0	0	0	0	0	6
Ttl. Mar.	0	0	0	0	0	6
Difference	0	0	0	0	0	0

ROCKY MOUNTAIN AREA

New Mexico

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Chaves	4	0	4	0	0	1
Dona Ana	0	0	0	0	0	2
Eddy	27	7,704	7	0	11	67
Lea	44	11,984	0	1	14	45
Luna	0	0	0	0	0	1
Otero	0	0	0	0	0	2
Bernalillo	0	0	0	0	0	2
McKinley	0	0	0	0	0	1
San Juan	1	0	0	1	0	5
San Miguel	0	0	0	0	0	1
Socorro	0	0	0	0	0	1
Torrance	0	0	0	0	0	1
Valencia	0	0	0	0	0	2
Ttl. Apr.	76	19,688	11	2	25	131
Ttl. Mar.	55	18,476	6	5	25	137
Difference	21	1,212	5	3	0	6

Wyoming

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	1	100	0	0	1	2
Carbon	0	0	0	0	2	3
Converse	0	0	0	0	1	3
Crook	0	0	0	0	2	0
Fremont	0	0	0	0	1	5
Hot Springs	1	0	1	0	0	3
Lincoln	0	0	0	0	0	3
Natrona	0	0	0	0	1	5
Niobrara	7	5,895	0	0	2	10
Park	0	0	0	0	2	3
Sublette	1	35	0	0	1	6
Sweetwater	2	475	0	0	0	2
Uinta	0	0	0	0	0	6
Weston	0	0	0	0	0	7
Miscellaneous	0	0	0	0	0	4
Ttl. Apr.	12	6,505	1	0	13	62
Ttl. Mar.	13	16,235	2	0	8	61
Difference	1	9,730	1	0	5	1

Colorado

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Boulder	0	0	0	0	0	1
Custer	0	0	0	0	0	1
El Paso	0	0	0	0	0	1
Fremont	0	0	0	0	1	1
Huerfano	0	0	0	0	0	7
Jackson	0	0	0	0	0	1
La Plata	0	0	0	0	0	1
Larimer	0	0	0	0	0	1
Las Animas	0	0	0	0	0	1
Logan	0	0	0	0	0	1
Moffat	0	0	0	0	1	4
Montezuma	0	0	0	0	0	1
Ouray	0	0	0	0	0	1
Park	0	0	0	0	0	1
Pueblo	0	0	0	0	0	1
Rio Blanco	0	0	0	0	0	2
Routt	0	0	0	0	0	1
Washington	0	0	0	0	0	1
Ttl. Apr.	0	0	0	0	2	29
Ttl. Mar.	2	0	2	0	1	25
Difference	2	0	2	0	1	4

Utah

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Daggett	1	0	0	1	1	0
Miscellaneous	0	0	0	0	1	5
Ttl. Apr.	1	0	0	1	2	5
Ttl. Mar.	0	0	0	0	1	6
Difference	1	0	0	1	1	1

Montana

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Big Horn	0	0	0	0	1	1
Blaine	0	0	0	0	0	2
Carbon	0	0	0	0	1	3
Choteau	0	0	0	0	0	1
Fergus	0	0	0	0	0	2
Glacier	8	1,030	0	0	1	12
Hill	0	0	0	0	0	1
Petroleum	0	0	0	0	0	2
Pondera	0	0	0	0	0	2
Toole	6	538	0	0	1	18
Miscellaneous	0	0	0	0	0	6
Ttl. Apr.	14	1,568	0	0	4	50
Ttl. Mar.	10	669	5	0	4	43
Difference	4	899	5	0	0	7

EASTERN KENTUCKY

Field—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Knott	7	0	0	7	1	3
Floyd	2	0	0	2	1	6
Morgan	0	0	0	0	0	2
Martin	3	4	0	2	1	6
Breathitt	0	0	0	0	0	1
Pike	0	0	0	0	4	4
Wolfe	0	0	0	0	0	1
Ttl. Apr.	12	4	0	11	7	23
Ttl. Mar.	9	55	1	7	7	25
Difference	3	51	1	4	0	2

Note: Production from gas wells is 2,612,000 cu. ft.

WESTERN KENTUCKY

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allen	1	0	1	0	0	0
Breckinridge	1	0	1	0	0	2
Butler	1	10	0	0	0	1
Caldwell	0	0	0	0	0	1
Christian	0	0	0	0	0	2
Daviess	11	230	7	0	0	14
Hancock	1	5	0	0	0	7
Henderson	1	118	0	0	2	5
Hopkins	0	0	0	0	0	1
Livingston	1	0	1	0	0	0
Logan	0	0	0	0	0	2
McCracken	0	0	0	0	0	1
McLean	3	0	3	0	0	4
Muhlenberg	0	0	0	0	0	1
Ohio	10	115	6	0	0	12
Todd	1	0	1	0	0	2
Webster	1	0	1	0	0	0
Ttl. Apr.	32	478	21	0	2	55
Ttl. Mar.	20	280	13	0	2	61
Difference	12	198	8	0	0	6

INDIANA

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Daviess	1	0	1	0	0	1
Decatur	1	0	0	1	0	0
Dubois	1	0	1	0	0	1
Gibson	10	1,060	3	0	4	17
Hancock	1	0	1	0	0	1
Greene	0	0	0	0	0	2
Jasper	0	0	0	0	0	2
Jay	0	0	0	0	0	2
Knox	1	0	1	0	0	3
Lagrange	0	0	0	0	0	1
Madison	0	0	0	0	0	2
Marion	2	10	0	0	0	0
Newton	0	0	0	0	0	1
Owen	1	0	1	0	0	1
Perry	1	0	1	0	0	0
Pike	1	0	1	0	0	2
Posey	5	155	2	0	2	7
Putnam	0	0	0	0	0	1
Randolph	0	0	0	0	0	2
Ripley	1	0	1	0	0	0
Spencer	6	40	2	3	2	10
Starke	0	0	0	0	0	1
St. Joseph	0	0	0	0	0	1
Sullivan	0	0	0	0	0	3
Vanderburg	0	0	0	0	0	1
Vigo	0	0	0	0	0	1
Warrick	0	0	0	0	1	2
Whitley	0	0	0	0	0	1
Ttl. Apr.	31	1,265	15	4	9	66
Ttl. Mar.	31	1,150	15	2	7	65
Difference	0	115	0	2	2	1

ILLINOIS

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Adams	0	0	0	0	0	1
Alexander	0	0	0	0	0	1
Bond	4	1	1	1	0	2
Brown	0	0	0	0	0	1
Bureau	0	0	0	0	0	1
Cass	1	0	1	0	0	0
Clark	0	0	0	0	0	8
Clay	2	98	0	0	0	3
Clinton	59	30,685	5	0	8	66
Coles	0	0	0	0	0	2
Crawford	0	0	0	0	2	3
Cumberland	0	0	0	0	1	0
De Witt	0	0	0	0	0	1
Edgar	0	0	0	0	0	4
Edwards	4	465	1	1	1	3
Effingham	2	0	2	0	0	1
Fayette	44	7,276	5	0	5	37
Ford	0	0	0	0	0	1
Knox	0	0	0	0	0	1
Gallatin	1	8	0	0	1	1
Hamilton	1	420	0	0	1	3
Hancock	1	0	1	0	0	0
Henry	1	0	1	0	0	0
Iroquois	0	0	0	0	0	1
Jackson	0	0	0	0	0	3
Jasper	0	0	0	0	0	2
Jefferson	2	128	1	0	1	2
Jersey	1	0	1	0	0	0
Lawrence	3	0	3	0	1	7
McDonough	0	0	0	0	0	1
Macon	1	0	1	0	0	0
Madison	0	0	0	0	0	2
Marion	104	110,037	1	0	23	122
Massac	0	0	0	0	0	2
Monroe	3	34	2	0	0	4
Montgomery	0	0	0	0	0	6
Peoria	0	0	0	0	0	1
Pope	0	0	0	0	0	1
Randolph	0	0	0	0	1	4
Richland	7	1,655	0	0	3	7
St. Clair	0	0	0	0	0	3
Schuyler	2	0	2	0	0	1
Shelby	0	0	0	0	0	3
Tazewell	0	0	0	0	0	2
Vermilion	0	0	0	0	0	1
Wabash	9	1,134	2	0	6	16
Washington	5	68	2	0	0	5
Wayne	11	1,887	3	0	3	14
White	22	3,804	3	2	8	40
Williamson	0	0	0	0	0	2
Ttl. Apr.	290	157,700	38	4	65	393
Ttl. Mar.	248	151,910	33	4	66	392
Difference	42	5,790	5	0	1	1

MICHIGAN

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegan	23	2,493	9	0	5	24
Arenac	0	0	0	0	0	3
Barry	1	20	0	0	0	2
Berrien	3	0	3	0	1	0
Calhoun	0	0	0	0	1	1
Cass	1	0	1	0	0	1
Clinton	0	0	0	0	0	2
Clare	6	1,648	1	0	1	6
Genessee	0	0	0	0	1	0
Gratiot	0	0	0	0	1	1
Isabella	6	1,915	0	0	4	14
Huron	0	0	0	0	0	1
Jackson	0	0	0	0	0	1
Kalamazoo	0	0	0	0	1	0
Kent	18	1,674	5	0	5	20
Mackinac	0	0	0	0	0	1
Missaukee	0	0	0	0	0	1
Midland	2	300	0	0	0	6
Monroe	4	451	0	0	4	6
Montcalm	1	0	1	0	2	2
Muskegon	1	0	1	0	0	4
Oakland	1	0	1	0	1	0
Ogemaw	1	33	0	0	0	2
Otsego	0	0	0	0	1	1
Ottawa	20	766	8	0	5	19
St. Clair	0	0	0	0	0	3
Shiawassee	0	0	0	0	1	3
Tuscola	1	60	0	0	1	3
Van Buren	7	366	3	0	1	10
Wexford	0	0	0	0	0	1
Hillsdale	0	0	0	0	1	0
Ionia	0	0	0	0	0	1
Lewanee	0	0	0	0	1	2
Mecosta	0	0	0	0	0	1
Osceola	0	0	0	0	0	1
Gladwin	0	0	0	0	0	2
Ttl. Apr.	96	9,726	33	0	38	145
Ttl. Mar.	100	7,814	49	2	34	150
Difference	4	1,912	16	2	4	5

OHIO

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Ashland	0	0	0	0	3	2
Athens	4	0	1	3	4	10
Columbiana	1	0	1	0	0	0
Coshocton	0	0	0	0	1	3
Cuyahoga	2	0	1	1	0	3
Fairfield	2	0	1	1	0	1
Franklin	0	0	0	0	0	1
Gallia	1	0	0	1	0	0
Guernsey	7	6	4	2	1	7
Hocking	1	50	0	0	1	1
Holmes	0	0	0	0	4	1
Jefferson	3	2	2	0	0	0
Knox	3	100	0	2	3	5
Lawrence	0	0	0	0	2	3
Licking	10	48	1	7	8	15
Lorain	0	0	0	0	1	1
Medina	23	223	2	1	6	12
Meigs	2	0	2	0	1	4
Monroe	1	0	1	0	1	8
Morgan	1	0	1	0	0	2
Muskingum	4	20	2	1	1	4
Noble	6	0	4	2	1	9
Perry	5	7	0	4	4	9
Stark	3	0	0	3	2	5
Summit	1	0	1	0	0	1
Tuscarawas	1	0	1	0	1	6
Vinton	1	0	0	1	0	0
Washington	5	11	1	1	2	9
Wayne	1	0	1	0	1	1
Ttl. Apr.	88	467	27	30	48	123
Ttl. Mar.	66	221	23	21	43	129
Difference	22	246	4	9	5	6

LIMA FIELD

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allen	0	0	0	0	0	1
Green	1	0	1	0	0	0
Henry	0	0	0	0	0	2
Putnam	0	0	0	0	0	1
Seneca	0	0	0	0	0	1
Wood	0	0	0	0	0	1
Ttl. Apr.	1	0	1	0	0	6
Ttl. Mar.	3	0	2	1	0	7
Difference	2	0	1	1	0	1

EASTERN FIELDS

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.
Allegany	66	93	0	0	19	71
Bradford	254	786	0	0	63	211
Northern Oriskany	13	0	11	2	5	8
Middle dist.	7	13	0	0	3	13
Butler-Armstrong	8	20	1	3	5	7
S.W. Pa.	18	10	4	10	6	34
S.E. Ohio	48	331	9	7	9	44
West Va.	37	73	8	19	11	93
Ttl. Apr.	451	1,326	33	41	121	481
Ttl. Mar.	439	1,572	18	53	84	529
Difference	12	246	15	12	37	48

WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Union Oil, No. 1 Austin, Dominguez, Los Angeles	32- 3-13	7,270	O.S. drlg.
Union Oil, No. 2 Austin, Dominguez, Los Angeles	29- 3-13	5,567	sd. sh. drlg.
Union Oil, No. 14 Carson, Dominguez, Los Angeles	32- 3-13	4,994	sd. sh. drlg.
Shell Oil, No. 104 Reyes, Dominguez, Los Angeles	33- 3-13	6,141	sd. sh. drlg.
Havenstrite, R. E., No. 3 Larronde, Dominguez, L. A.	32- 3-13	7,300	O.S. drlg.
Seaport Oil, No. 1 Dasteel, Dominguez, L. Angeles	32- 3-13	7,590	gr. sd. drlg.
Apex Pet., No. 1 Hatfield, Rosecrans, Los Angeles	20- 3-13	8,140	flow 110 b.d.
Mission Oil, No. 1 Pierce, Rosecrans, Los Angeles	20- 3-13	6,693	sd. sh. drlg.
So. Cal. Pet., No. 2 Slabaugh, Rosecrans, L. Angeles	20- 3-13	7,580	O.S. drlg.
St. Anthony Oil, No. 3 Gordon, Rosecrans, L. Angeles	19- 3-13	7,750	recmtd. 7,314
Union Oil, No. 40 Rosecrans, Rosecrans, L. Angeles	19- 3-13	8,118	completing
Union Oil, No. 41 Rosecrans, Rosecrans, L. Angeles	19- 3-13	7,950	completing
Howard Oil, No. 2 Byrens, Rosecrans, Los Angeles	20- 3-13	7,425	O.S. drlg.
Chicago Oil, No. 1 Founders, Rosecrans, Los Angeles	20- 3-13	6,880	sd. sh. drlg.
Thorley Oil, No. 1 Athens, Rosecrans, Los Angeles	7- 3-13	5,293	sd. sh. drlg.
El Rey Oil, No. 1 Westmore, Athens, Los Angeles	2- 3-14	9,063	P.B. 9,000
Federal Oil, No. 1 Smith, Inglewood, Los Angeles	7- 2-14	4,890	sd. sh. drlg.
Turf Oil, No. 1 H.R.A., Potrero, Los Angeles	34- 2-14	7,900	sd. sh. drlg.
Tide Water A. O., No. 13 Porter, Aliso Canyon, L. A.	27- 3-16	5,225	flow 1,750 b.d.
Tide Water A. O., No. 15 Porter, Aliso Canyon, L. A.	27- 3-16	2,283	sd. sh. drlg.
Tide Water A. O., No. 22 Porter, Aliso Canyon, L. A.	27- 3-16	2,320	sd. sh. drlg.
Brit. Amer. Oil, No. 1 Perkins, Newhall, L. Angeles	14- 3-16	4,725	bailing
Creighton-Hammon Synd., No. 1 C-H, Newhall, L. A.	17- 3-16	191	sd. sh. drlg.
Barnsdall Oil, No. 9 R.S.F., Newhall, Los Angeles	27- 4-17	7,195	recmtd. 6,993
Barnsdall Oil, No. 10 R.S.F., Newhall, Los Angeles	26- 4-17	7,240	completing
Barnsdall Oil, No. 11 R.S.F., Newhall, Los Angeles	26- 4-17	2,990	sd. sh. drlg.
General Pet., No. 2 P.E., Wilmington, Los Angeles	35- 4-13	4,120	P.B. 3,785
Continental Corp., No. 3 L.A.C.F.C., Wilmington, L. A.	2- 5-13	2,850	O.S. drlg.
Hancock Oil, No. 27-A Harbor, Wilmington, L. Ang.	35- 4-13	4,050	flow 1,275 b.d.
Long Beach Dev., No. 12-W Harbor, Wilm., L. A.	10- 5-13	3,948	completing
Long Beach Dev., No. 13-W Harbor, Wilm., L. A.	3- 5-13	2,180	sd. sh. drlg.
M. A. K. Pet., No. 1 Harbor, Wilmington, L. Angeles	35- 4-13	3,423	flow 175 b.d.
Union Pacific R. R., No. 135, Wilmington, L. Angeles	4- 5-13	5,610	recmtd. 5,153
Union Pacific R. R., No. 136, Wilmington, L. Angeles	3- 5-13	3,940	flow 990 b.d.
Union Pacific R. R., No. 138, Wilmington, L. Angeles	3- 5-13	2,981	sd. sh. drlg.
Union Pacific R. R., No. 139, Wilmington, L. Angeles	3- 5-13	5,450	O.S. drlg.
Union Pacific R. R., No. 140, Wilmington, L. Angeles	4- 5-13	4,255	sd. sh. drlg.
Union Pacific R. R., No. 141, Wilmington, L. Angeles	3- 5-13	4,122	P.B. 3,837
Union Pacific R. R., No. 142, Wilmington, L. Angeles	3- 5-13	2,184	sd. sh. drlg.
Union Pacific R. R., No. 145, Wilmington, L. Angeles	3- 5-13	2,050	sd. sh. drlg.
Union Pacific R. R., No. 23-E, Wilmington, L. A.	3- 5-13	3,740	flow 200 b.d.
Union Pacific R. R., No. 25-E, Wilmington, L. A.	3- 5-13	1,985	sd. sh. drlg.
Union Pacific R. R., No. 6-P.D., Wilmington, L. A.	3- 5-13	2,704	flow 485 b.d.
Kern Oil, No. 25 Monterey, Montebello, Los Angeles	2- 2-12	7,659	will deepen
Kern Oil, No. 30 Monterey, Montebello, Los Angeles	2- 2-12	7,820	flow 715 b.d.
Kern Oil, No. 34 Monterey, Montebello, Los Angeles	2- 2-12	7,890	flow 1,425 b.d.
Kern Oil, No. 5 Mulholland, Montebello, L. Angeles	2- 2-12	7,641	recmtd. 7,538
Kern Oil, No. 3 Eggleston, Montebello, L. Angeles	2- 2-12	7,744	O.S. drlg.
Brookline Oil, No. 1 Drake, Montebello, L. Angeles	2- 2-12	7,710	flow 115 b.d.
Chemical Oil, No. 1 Chemiculture, Montebello, L. A.	12- 2-12	4,577	sd. sh. drlg.
Columbia Oil, No. 1 Schelnik, Montebello, L. Angeles	3- 2-12	8,154	redrlg. 7,656
Mabee Co., No. 43 Monterey, Montebello, L. Angeles	2- 2-12	7,888	flow 630 b.d.
Montebello Oil, No. 2 Wallace, Montebello, L. A.	3- 2-12	7,605	O.S. drlg.
Mont. Reservoir Oil, No. 2 Mont., Montebello, L. A.	2- 2-12	7,746	completing
Texas Co., No. 4 Wilcox, Montebello, Los Angeles	3- 2-12	7,476	D.P. stuck
United Mont. Oil, No. 3 Mont., Montebello, L. Angeles	11- 2-12	7,610	flow 50 b.d.
Allied Pet., No. 34 Signal, Long Beach, L. Angeles	30- 4-12	10,640	O.S. drlg.
Convoy Oil, No. 1-A Signal, Long Beach, L. Angeles	24- 4-13	3,644	pump 85 b.d.
Sunset Oil, No. 2 Whitney, Long Beach, Los Angeles	19- 4-12	3,451	pump 70 b.d.
Dormax Oil, No. 2 Signal, Long Beach, Los Angeles	30- 4-12	4,350	redrlg. 3,990
Exeter Oil, No. 3 Olson, Long Beach, Los Angeles	19- 4-12	4,597	rig to pump
Hilldon Oil, No. 2 Flood Control, Long Beach, L. A.	11- 4-13	4,560	sd. sh. drlg.
Cal-Mac Oil, No. 3 Oil Exchange, Long Beach, L. A.	19- 4-12	3,365	sd. sh. drlg.
Mitchell Oil, No. 1 R.B., Long Beach, Los Angeles	19- 4-12	3,680	sd. sh. drlg.
Tucker, H. M., No. 1 Heath, Buena Park, Orange	34- 3-11	6,200	sd. sh. drlg.
Sonwell Oil, No. 2 Coyote, East Coyote, Orange	13- 3-10	3,310	pump 120 b.d.
Bartholomae Oil, No. 8 Stern, East Coyote, Orange	22- 3-10	1,560	sd. sh. drlg.
Standard Oil, No. 69 Emery, West Coyote, Orange	24- 3-11	5,790	completing
Southwest Expl., No. 27 State, Hunt. Beach., Orange	10- 6-11	4,620	O.S. drlg.
Owens & Baker, No. 1 Newland, Hunt. Beach, Orange	36- 5-11	4,000	sd. sh. drlg.
Termo Co., No. 409-4 State, Hunt. Beach, Orange	10- 6-11	4,719	will redrl.
Bolsa Chica Oil, No. 6 Wilson, Hunt. Beach, Orange	10- 6-11	1,482	sd. sh. drlg.
South Basin Oil, No. 93 H.B., Hunt. Beach, Orange	2- 6-11	7,590	redrlg. 3,690
Continental Oil, No. 43 Bixby, Seal Beach, Orange	11- 5-12	3,981	sd. sh. drlg.
United Oil, No. 1 Schimming, Stanton, Orange	25- 4-11	8,490	gr. sd. drlg.
Thompson, M. N., No. 1 Flat, Costa Mesa, Orange	9- 6-10	5,625	sd. sh. drlg.

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location and county—	S.T.R.	Depth	Status
Cole, F. E., No. 1 Giacomini, Santa Maria, S. Barbara	24-10-35	4,806	tested wet
Union Oil, No. 1 Pezzoni, Betteravia, Santa Barbara	33-10-35	2,383	sd. sh. drlg.
Republic Pet., No. 2 Hollister, Gaviota, S. Barbara	36- 5-33	3,200	rigged up
Petrol Corp., No. 3-15 Tognazzini, Gato Ridge, S. Barb.	15- 8-32	1,997	sd. sh. drlg.
Santa Clara Oil, No. 1 Well, Shiells Canyon, Ventura	3- 3-19	280	sd. sh. drlg.
Texas Co., No. 139 Shiells, Shiells Canyon, Ventura	4- 3-19	2,874	P.B. 2,612
Rio Hondo Oil, No. 1 Cosby, Hopper Canyon, Ventura	14- 4-19	1,205	cleaning out
Merchants Pet., No. 8 Cochran, Sespe, Ventura	1- 4-20	2,392	sd. sh. drlg.
Continental Oil, No. 16 Grubb, San Miguelito, Ventura	24- 3-24	5,687	sd. sh. drlg.
C. C. M. Oil, No. 35-B Hobson, Rincon, Ventura	16- 3-24	1,288	sd. sh. drlg.
C. C. M. Oil, No. 9-A Hobson, Rincon, Ventura	15- 3-24	6,515	cleaning out
Tide Water A. O., No. 7 V.L.W., Ventura Ave., Vent.	23- 3-23	7,140	cleaning out
Tide Water A. O., No. 46 V.L.W., Vent. Ave., Ventura	24- 3-23	5,161	sd. sh. drlg.
Tide Water A. O., No. 17 McGonigle, Vent. Ave., Vent.	23- 3-23	9,097	sd. sh. drlg.
Tide Water A. O., No. 119 Lloyd, Vent. Ave., Ventura	27- 3-23	9,180	tested wet
Tide Water A. O., No. 22 Hartman, Vent. Ave., Vent.	22- 3-23	7,594	sd. sh. drlg.
Tide Water A. O., No. 25 Hartman, Vent. Ave., Vent.	22- 3-23	6,655	sd. sh. drlg.
Shell Oil, No. 116 Taylor, Ventura Ave., Ventura	29- 3-23	6,010	sd. sh. drlg.
Shell Oil, No. 117 Taylor, Ventura Ave., Ventura	21- 3-23	7,841	sd. sh. drlg.
Shell Oil, No. 118 Taylor, Ventura Ave., Ventura	29- 3-23	7,142	sd. sh. drlg.
Cal. Alliance Pet., No. 2 Hartman, Vent. Ave., Vent.	22- 3-23	9,425	P.B. 8,200
Cal. Alliance Pet., No. 1 Schmidt, Vent. Ave., Vent.	21- 3-23	7,625	sd. sh. drlg.
British American Oil, No. 1 Barn., Vent. Ave., Vent.	22- 3-23	6,770	sd. sh. drlg.
British American Oil, No. 10 Hart., Vent. Ave., Vent.	21- 3-23	4,491	sd. sh. drlg.
Lloyd Corp., No. 5 Dabney, Ventura Ave., Ventura	24- 3-23	5,876	sd. sh. drlg.
Standard Oil., No. 1 Rideout, Delano gas field, Kern	34-24-23	2,460	will deepen
Trico O. & G., No. 3 Tulare, Delano gas field, Kern	27-24-23	2,542	will P.B.
North Kern Oil, No. 1 Ranch, Fowler, Kern	16-25-22	2,176	sd. sh. drlg.
General Pet., No. 1 K.P.C., Lost Hills, Kern	16-26-22	3,785	sd. sh. drlg.
Franco-Western Oil, No. 19 Front, McKittrick, Kern	8-30-22	1,735	sd. sh. drlg.
Freda Oil, No. 3 Laymance, McKittrick, Kern	20-30-22	686	sd. sh. drlg.
Union Oil, No. 1 Weston, Belridge, Kern	13-29-21	7,550	sd. sh. drlg.
Belridge Oil, No. 7-1 fee, North Belridge, Kern	1-28-20	1,994	sd. sh. drlg.
Belridge Oil, No. 10-1 fee, North Belridge, Kern	1-28-20	5,983	sd. sh. drlg.
Continental Oil, No. 4 Result, North Belridge, Kern	36-27-20	5,170	will deepen
Tide Water A. O., No. 33-21 Bel., North Belridge, Kern	21-27-20	3,366	sd. sh. drlg.
Texas Co., No. 1 Theta, Shale Hills, Kern	12-28-19	3,395	redrlg. 1,990
Bishop Oil, No. 3 Buchner, Mount Poso, Kern	20-26-28	1,605	O.S. drlg.
McDonald & Dearin, No. 5 Kernco, Kern Front, Kern	11-28-27	1,787	pump. 130 b.d.
Dick & Dore Oil, No. 30 Kern, Kern River, Kern	34-28-28	588	pump 5 b.d.
Dick & Dore Oil, No. 31 Kern, Kern River, Kern	34-28-28	668	rig to pump
Dick & Dore Oil, No. 32 Kern, Kern River, Kern	34-28-28	648	pump 5 b.d.
Helm & Smith, No. 20 Kern, Kern River, Kern	34-28-28	505	O.S. drlg.
Helm & Smith, No. 22 Kern, Kern River, Kern	34-28-28	398	sd. sh. drlg.
Richards Oil, No. 13 Davis, Kern River, Kern	8-29-28	1,022	pump 20 b.d.
Sleeper Ridge Oil, No. 1 Ridge, Kern River, Kern	15-29-28	2,517	idle
Crestmont Oil, No. 3 Coffer, Rount Mountain, Kern	8-28-29	1,375	sd. sh. drlg.
Grizzly Bear Oil, No. 4 Kelly, Round Mtn., Kern	6-28-29	1,815	cleaning out
Monterey Expl., No. 15 Shell-Duff, Edison, Kern	15-30-29	1,731	O.S. drlg.
Gooden, Fred, No. 2 Needham, Edison, Kern	21-30-29	2,447	sd. sh. drlg.
Goodrum & Vincent, No. 5 S.P., Edison, Kern	31-29-30	380	sd. sh. drlg.
Morton, L. C., No. 1 Jewett, Arvin, Kern	23-31-29	6,674	O.S. drlg.
Western Gulf Oil, No. 45-B, KCL, Fruitvale, Kern	22-29-27	10,590	redrld. 3,589
Union Oil, No. 45-34, KCL, Rio Bravo, Kern	34-28-25	10,007	sd. sh. drlg.
Union Oil, No. 54-34, KCL, Rio Bravo, Kern	34-28-25	11,236	sd. sh. drlg.
Union Oil, No. 63-34, KCL, Rio Bravo, Kern	34-28-25	7,060	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
B. ck., bottom choke.
Br. sh., brown shale.
B.S., basic sediment.
C.&P., cellar and pits.
Cd. or Crd., cored.
C.D., correct depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg., or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.S.T., drill-stem test.
D.P., drill pipe.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe-line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Recvd., recovered.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtrk. or St., sidetracked.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel-line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas, and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T. ck., top choke.
T.P., tubing pressure.
Tr., tract.
Tstd., tested.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.O.O., waiting on orders.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Superior Oil, No. 3-1 Osborn, Rio Bravo, Kern	28-28-25	5,583	sd. sh. drlg.
Superior Oil, No. 3 Burner, Rio Bravo, Kern	27-28-25	10,846	sd. sh. drlg.
Superior Oil, No. 1 Merrill, Greeley, Kern	1-29-25	10,277	sd. sh. drlg.
Superior Oil, No. 1 Brandt, Greeley, Kern	28-29-26	7,493	sd. sh. drlg.
Standard Oil, No. 11-22, KCL, Greeley, Kern	18-29-26	8,998	sd. sh. drlg.
Standard Oil, No. 12-8, KCL, Greeley, Kern	7-29-26	11,510	completing
Standard Oil, No. 12-9, KCL, Greeley, Kern	7-29-26	6,993	sd. sh. drlg.
General Pet., No. 1 Oughton, Greeley, Kern	12-29-25	11,292	hd. sh. drlg.
General Pet., No. 2 Sullivan, Greeley, Kern	12-29-25	11,395	completing
Shell Oil, No. 38-20-A, KCL, Ten Section, Kern	20-30-26	7,651	sd. sh. drlg.
Shell Oil, No. 38-21-B, KCL, Ten Section, Kern	21-30-26	7,590	sd. sh. drlg.
Shell Oil, No. 41-31-B, KCL, Ten Section, Kern	31-30-26	8,055	sd. sh. drlg.
Shell Oil, No. 86-12-B, KCL, Strand, Kern	12-30-25	8,499	O.S. drlg.
Ohio Oil, No. 19-E, KCL, Canal, Kern	13-30-25	8,306	O.S. drlg.
Richfield Oil, No. 18-28-A, KCL, Tupman, Kern	28-30-25	5,850	sd. sh. drlg.
Richfield Oil, No. 38-28-A, KCL, Tupman, Kern	28-30-25	9,175	flow 1,160 b.d.
Richfield Oil, No. 58-28-A, KCL, Tupman, Kern	28-30-25	7,096	sd. sh. drlg.
Richfield Oil, No. 78-30-A, KCL, Tupman, Kern	30-30-25	7,572	sd. sh. drlg.
Richfield Oil, No. 72-32-A, KCL, Tupman, Kern	32-30-25	6,080	sd. sh. drlg.
Richfield Oil, No. 14-33-A, KCL, Tupman, Kern	33-30-25	2,810	sd. sh. drlg.
Richfield Oil, No. 18-33-A, KCL, Tupman, Kern	33-30-25	7,941	sd. sh. drlg.
Richfield Oil, No. 34-33-A, KCL, Tupman, Kern	33-30-25	5,464	sd. sh. drlg.
Richfield Oil, No. 52-33-A, KCL, Tupman, Kern	33-30-25	6,928	sd. sh. drlg.
Richfield Oil, No. 54-33-A, KCL, Tupman, Kern	33-30-29	7,070	sd. sh. drlg.
Richfield Oil, No. 34-29-A, KCL, Tupman, Kern	29-30-25	5,681	sd. sh. drlg.
Richfield Oil, No. 276-29-A, KCL, Tupman, Kern	29-30-25	8,455	sd. sh. drlg.
Richfield Oil, No. 78-28-B, KCL, Cole's Levee, Kern	28-30-25	2,583	sd. sh. drlg.
Richfield Oil, No. 54-4-B, KCL, Cole's Levee, Kern	4-31-25	7,930	sd. sh. drlg.
Standard Oil, No. 20-6, KCL, Cole's Levee, Kern	9-31-25	8,392	sd. sh. drlg.
Ohio Oil, No. 8-F, KCL, Cole's Levee, Kern	11-31-25	9,495	O.S. drlg.
Ohio Oil, No. 9-F, KCL, Cole's Levee, Kern	3-31-25	2,483	sd. sh. drlg.
Foster, Robert, No. 1 Hollingsworth, Mid-Sun., Kern	22-32-23	1,720	sd. sh. drlg.
Signal O. & G., No. 8 Kendon, Midway-Sunset, Kern	35-32-23	1,266	sd. sh. drlg.
Shell Oil, No. 45-9 B.V.A., Midway-Sunset, Kern	9-32-25	11,990	hd. sd. drlg.
McDonald, Joseph, No. 20 Midway, Mid.-Sun., Kern	26-31-11	1,498	sd. sh. drlg.
Ohio Oil, No. 43-3-B, KCL, Paloma, Kern	3-32-26	10,361	fish. D.P.
Western Gulf-Texas Co., No. 74-3-A, KCL, Pal., Kern	3-32-26	10,700	will recmt.
Oil Scout, Inc., No. 1 Tejon, Comanche Point, Kern	27-32-29	6,250	sd. sh. drlg.
Richfield Oil, No. 1 Ranch, Tejon Ranch, Kern	2-10-19	5,482	hd. sh. drlg.
Richfield Oil, No. 2 KCL, Wheeler Ridge, Kern	28-11-20	2,085	hd. sd. drlg.
Erickson & Swanson, No. 2 Gravender, Kgsbrg., Kern	22-16-22	696	hd. sh. drlg.
Logan, J. E., No. 44 Yearout, Cantua, Fresno	26-16-14	4,760	sd. sh. drlg.
Jergins Trust, No. 1 Cheney, Panoche Creek, Fresno	29-14-13	8,885	will P.B.
Texas Co., No. 1 S.P., Turk Anticline, Fresno	23-17-15	10,116	cleaning out
Shell Oil, No. 45-2, East Coalinga, Fresno	2-20-15	3,595	O.S. drlg.
Standard Oil, No. 53-19-B fee, N.E. Coalinga, Fresno	19-19-16	8,136	cmtd. 8,045
Standard Oil, No. 68-19-B fee, N.E. Coalinga, Fresno	19-19-16	8,090	br. sh. drlg.
Standard Oil, No. 82-19-B fee, N.E. Coalinga, Fresno	19-19-16	7,594	cleaning out
Standard Oil, No. 86-19-B fee, N.E. Coalinga, Fresno	19-19-16	2,853	sd. sh. drlg.
Amerada Pet., No. 1-20-B Ewing, N.E. Coal., Fresno	20-19-16	8,203	fish packer
Texas Co., No. 5-20-B Kimberlin, N.E. Coalinga, Fres.	20-19-16	8,205	completing
Superior Oil, No. 5 Husong, N.E. Coalinga, Fresno	18-19-16	7,972	sd. sh. drlg.
Pure Oil, No. 44-30-B Schwinn, N.E. Coalinga, Fresno	30-19-16	7,260	br. sh. drlg.
Wilshire Oil, No. 62-30-B, N.E. Coalinga, Fresno	30-19-16	7,742	br. sh. drlg.
Bandini Pet., No. 71-30-B, N.E. Coalinga, Fresno	30-19-16	7,193	sd. sh. drlg.
Lytle, R. S., Agent, No. 35-18-F, S.E. Coalinga, Fresno	18-20-16	7,741	flow 2,752 b.d.
Lytle, R. S., Agent, No. 68-18-F, S.E. Coalinga, Fresno	18-20-16	7,522	form. test
Lytle, R. S., Agent, No. 77-18-F, S.E. Coalinga, Fresno	18-20-16	4,995	sd. sh. drlg.
Univ. Consd. Oil, No. 72-24-C, S.E. Coalinga, Fresno	24-20-15	6,295	sd. sh. drlg.
Standard Oil, No. 68-13-C fee, S.E. Coalinga, Fresno	13-20-15	5,932	sd. sh. drlg.
Standard Oil, No. 88-13-C fee, S.E. Coalinga, Fresno	13-20-15	7,040	sd. sh. drlg.
Standard Oil, No. 22-17-F fee, S.E. Coalinga, Fresno	17-20-16	6,651	sd. sh. drlg.
Standard Oil, No. 1-19-F fee, S.E. Coalinga, Fresno	19-20-16	6,994	sd. sh. drlg.
Superior Oil, No. 3-B Cagle, S.E. Coalinga, Fresno	6-20-16	7,990	sd. sh. drlg.
Union Oil, No. 9 King, Kettleman North Dome, Fres.	29-21-17	9,670	sd. sh. drlg.
K. N. D. A., No. 322-18-J, Kettleman N. Dome, Fresno	18-21-17	7,986	br. sh. drlg.
K. N. D. A., No. 23-20-J, Kettleman N. Dome, Fresno	20-21-17	6,990	sd. sh. drlg.
K. N. D. A., No. 36-20-J, Kettleman N. Dome, Fresno	20-21-17	8,700	will deepen
K. N. D. A., No. 4-16-Q, Kettleman N. Dome, Fresno	16-22-18	8,250	cleaning out
K. N. D. A., No. 27-26-Q, Kettleman N. Dome, Kings	26-22-18	1,255	sd. sh. drlg.
K. N. D. A., No. 38-26-Q, Kettleman N. Dome, Kings	26-22-18	8,368	P.B. 7,724
K. N. D. A., No. 58-26-Q, Kettleman N. Dome, Kings	26-22-18	5,973	sd. sh. drlg.
Standard Oil, No. 321-29-J, Kettleman N. D., Fresno	29-21-17	10,360	recmtd. 10,286
Standard Oil, No. 334-29-J, Kettleman N. D., Fresno	29-21-17	8,985	sd. sh. drlg.
Standard Oil, No. 41-35-Q, Kettleman N. Dome, Kings	35-22-18	8,305	flow 585 b.d.
Holly Dev., No. 1 Meherin, Huasna, San Luis Obispo	7-32-13	4,072	dry; abd.
Cal. Fuel Oil, Inc., No. 3 Alberta, Huasna, S. L. Obispo	5-32-13	1,260	sd. sh. drlg.
Amerada Pet., No. 1 Carpenter, Rio Vista, Solano	20- 4- 3	4,354	15,000 m.c.f.
Calaveras Co., No. 1 Elliott, Rio Vista, Solano	30- 4- 3	4,135	gas zone
Tassajara Oil, No. 1 Rasmussen, Tass., Contra Costa	9- 2- 1	9,777	P.B. 5,640

OKLAHOMA

Week Ended May 18

NORTHERN OKLAHOMA

Beckham County

Fred Coogan's No. 1 Kinchen, SE SE SE Sec. 4-9-25w. Dolo. 3,260 ft.; T.D. 3,714 ft.; P.B. 3,706 ft.; W.I.H.

Caddo County

Sinclair Prairie Oil Co.'s No. 1 Groman, SW NW NW Sec. 1-16-13w. Wlx. 9,179 ft.; sd. 10,074 ft.; cd. 10,871-75 ft.; N. S.; Arb. 10,922 ft.; T.D. 11,026 ft.; P.B. 9,370 ft.; C.O. at 6,600 ft.; W. 100 ft. blk. O.I.H.

Creek County

Indo Oil Co.'s No. 1 Slick, NW NW NW Sec. 1-16-9. S.O. 1,145-78 ft.; S.D. 2,400 ft., in sh.

Dewey County

Magnolia Pet. Co.'s No. 1 Fiekes. C SW SW Sec. 31-18-14w. D.S.T. rec. mud at 7,718 ft.; T.D. 9,475 ft.; ran tbg. to 6,463 ft. to cmt. cugs; 2,700 lb. P. while S.I.

Garfield County

Champlin Ref. Co.'s No. 1 Kunkel, C E½ SE NW Sec. 23-23-6w. Drlg. 4,275 ft.

Hughes County

J. W. Boydston's No. 1 Robstein, C NW SE Sec. 11-6-9. S.D. 1,020 ft.

Hall & Jordan's No. 1-A Barker, SE SE SW Sec. 3-8-9. S.O. in sd. 2,074 ft.; T. D. 2,109 ft.; est. 2 B.O.; S.D.

Morgan-Gulf Prod. Co.'s No. 1 Diamond, C E½ NW SE Sec. 33-9-9. Drlg. 3,368 ft.

Kay County

Malarnee Oil Co.'s No. 1 Harris, C SW NE Sec. 14-25-1. Miss. 4,050 ft.; chat with S.O. 4,063-4,105 ft.; fng. bit; T.D. 4,385 ft.

Kingfisher County

Olsen Drlg. Co.'s No. 1 Geis, C NE SW Sec. 15-18-9w; (O.W.D.D.). O.T.D. 8,507 ft.; drlg. sdy. dolo. 9,379 ft.

Phillips Pet. Co.'s No. 1 Grape, C NW SE Sec. 30-18-5w. Layton 5,600 ft.; O.S.W. 4,146 ft.; Miss. 6,670 ft.; lost circ. 6,727 ft.

Kiowa County

Carter's No. 1 Hinton, SE SE SE Sec. 1-7-17w. Drlg. 1,167 ft.

Gled Oil Co.'s No. 1 McCurdy, NE cor. Sec. 18-6-17w. Gas 447-59 ft.; T.D. 883 ft.; D.&A.

C. H. Marshall's No. 1 Pottchin, NE NW NW Sec. 28-7-18w. Drlg. 2,000 ft.

Southwestern Okla. O. & G. Co.'s No. 2 Foltz, NW SE SE Sec. 10-6-18w. T.D. 1,130 ft.; S.D.; repairs.

Lincoln County

Fields & Nagle's No. 1 Alspaugh, SW SE NW Sec. 35-15-6. Cg. 2,222 ft.

Logan County

Eason Oil Co.'s No. 1 Wells, NE NW NE Sec. 15-16-2w. T.D. 1,300 ft.; P.B. to straighten hole.

Kerlyn Oil Co.'s No. 1 Cavanaugh, C W½ SW NW Sec. 1-15-4w. Drlg. 3,040 ft.

Kerlyn Oil Co.'s No. 1 Chitwood, NE NE SW Sec. 15-16-4w. Drlg. 5,412 ft.

McIntosh County

Phillips' No. 1 Blankenship, C SW NW Sec. 33-10-13. Hntn. 3,691 ft.; Vla. 3,806 ft.; T.D. 3,809 ft.; U.R.

Muskogee County

R. Garrett's No. 1 Escoe, SW SW SE Sec. 16-13-17. S.D. 1,665 ft.; est. 2,000,000 cu. ft. gas.

Noble County

Aliaddin Pet. Co.'s No. 1 Wentz, C W½ NE SW Sec. 11-22-2. Vla. 4,361 ft.; dolo. 4,393 ft.; T.D. 4,486 ft.; D.&A.

Helmerich & Payne's No. 1 Fireshoker, SE SE NE Sec. 11-24-3. Drlg. 2,040 ft.

Okfuskee County

Burke-Greis' No. 1 Dew, NE NE NE Sec. 9-12-9. Drlg. 1,477 ft.

McIntyre's No. 1 Richardson, NE SW NW Sec. 19-10-8. T.D. 3,558 ft.; perf. 2,020-60 ft.; N.S.; S.D.

C. A. Yoakum's No. 1 Long, C SW SE Sec. 34-12-9. T.D. 3,826 ft.; ga. 7,000,000 cu. ft. gas; S.I.

C. A. Yoakum's No. 1-A Replogle-Johnson, NW NW NE Sec. 11-11-10. F. 135 bbl. in 20 hrs.; S.I. and F. 107 bbl. in 24 hrs.; comp.

Payne County

Comoll-Haskins' No. 1 Meyer, NW SE SE Sec. 17-17-6. T.D. 2,006 ft.

Devonian Oil Co.'s No. 1-A Scott, SE SE NE Sec. 19-18-5. Drlg. 3,520 ft.

Pontotoc County

Crescent Oil Co.'s No. 2 Thompson, NE NW SW Sec. 29-3-4. T.D. 553 ft.

Patterson's No. 1 Isaacs, SW NW NE Sec. 3-4-4. Vla. 2,560 ft.; T.D. 2,892 ft.; lost circ.

Pottawatomie County

Alma Oil Co.'s No. 1 Harrington, NW SE NW Sec. 24-9-4. T.D. 4,510 ft.; P.B. 4,430 ft.; F. 150 B.O. in 6 hrs. and died; S.I. for P.L.

J. W. Meazel's No. 1 Billington, SE NE NE Sec. 26-9-4. Wlx. 4,473 ft.; T.D. 4,508 ft.; F. 105 B.O. in 12 hrs.; 1-in. ck.

Simpson-Roodhouse's No. 1 Neal, NW NE SE Sec. 33-6-3. Syl. 3,985 ft.; Vla. 4,006 ft.; stain; T.D. 4,012 ft.; D.&A.

J. F. Smith's No. 1-A McKnown, SE SW NW Sec. 25-3-4. Drlg. 3,235 ft.

Taber et al's No. 1 McKinney, C E½ SE SW Sec. 11-10-4. Drlg. 4,325 ft.

Seminole County

Elm Oil et al's No. 1 Evans, SE SE NE Sec. 17-10-5. Drlg. 4,330 ft.

Murta et al's No. 1 Harber, C W½ NE SE Sec. 4-10-6. Drlg. 3,185 ft.

Washita County

Continental Oil Co.'s No. 1 School Id., C NE Sec. 16-8-16w. Gr. wsh. 3,005 ft.; drlg. 6,255 ft.

SOUTHERN OKLAHOMA

Atoka County

Holly et al's No. 1 Johnson, NW NW NE Sec. 36-3s-13. S.D. 990 ft.

Kirksey's No. 1 Baskett, SW SE SE Sec. 7-3s-10e. Sdy. L. 470-80 ft.; S.O.; S.D.; reprs. 600 ft.

Choctaw County

Clyde Ross et al's No. 1 Hardy, SE SE NW Sec. 21-7s-15. S.D. 1,950 ft.

Comanche County

Jenkins' No. 1 Whitehead, NE cor. Sec. 3-1s-13w. Drlg. 500 ft.

W. I. Wynn's No. 1 Lowe, SE NW NW Sec. 7-1n-10w. Est. 15 B.O.P.D.; T.D. 256 ft.

Cotton County

Selby O. & G. Co.'s No. 1 Abbott, SW SW NW Sec. 11-5s-12w. Arb. 3,250 ft.; S.D. 3,480 ft.

Marshall County

Johnson et al's No. 1 Godfrey, SW SE NE Sec. 14-6s-6e. Vla. 2,627 ft.; S.S.O.; T.D. 4,582 ft.; P.B. 3,809 ft.; attempt to acd.; to D.D.

May Oil Corp.'s No. 1 Sacrea, SW NE SW Sec. 17-5-5. Sd. and S.G. 1,023-27 ft.; blk. sh. 1,033-37 ft.; gas sd. 1,120-ft.; est. 6,000,000 cu. ft. gas; T.D. 1,132 ft.; drld. plug and C.O. to bttm.; S.D.

Stephens County

Edwin Bristow's No. 1 Damron, SE NW SW Sec. 25-2s-6w. T.D. 1,545 ft.; P.B. 1,565 ft.; to test.

Jackson's No. 1 Marshall, SE NE NE Sec. 1-1s-6w. T.D. 2,575 ft. in sh.; S.D.

Tillman County

F. W. Johnson's No. 1 Longacre, NE NE SE Sec. 32-25-17w. T.D. 3,288 ft.; F. 170 B.O., 30 B.W.P.D.; gr. 42°; drlg. cmt.

KANSAS

Week Ended May 18 (Descriptions are East unless marked otherwise)

Barber County

Sinclair-Prairie Oil Co.'s No. 1 Binning, C S½ SE SW Sec. 26-32-13w. W.O.C. 359 ft.

Barton County

Champlin Ref. Co.'s No. 1 Kasselman, CEL SE NW Sec. 22-20-11w. Loc.

Gulf et al's No. 1 Sander, CNL SW SE Sec. 30-13-16w. W.O.C. 215 ft.

Butler County

J. H. Wagoner's No. 1-A Ramsey, SW NW SE Sec. 8-24-5. Drlg. 1,475 ft.

Ralph Wixon's No. 3 Bolin, SE SW NE Sec. 1-27-6. Drlg. 1,820 ft.

Cloud County

E. T. Lindsay et al's No. 1 LeBlanc, C S½ SW NW Sec. 35-6-1w. Lans. 1,980 ft.; Miss. 2,530 ft.; Arb. 3,375-3,407 ft.; D.&A.

Cowley County

Barwick & Sheridan's No. 1 Warren, C W½ NW NW Sec. 18-35-6. Drlg. 1,678 ft.

C. L. Carlock's No. 1 Starkey, CSL SE SE Sec. 21-30-7. Lans. 1,635 ft.; H.F. W. 3,194 ft., T.D.; D.&A.

Foster Oil Co.'s No. 2 Howard, E½ SW SW Sec. 8-34-4. Drlg. 2,065 ft.

Hartman & Brewer's No. 1 Falkingham: CNL NW SE Sec. 22-30-4. Arb. 3,334-36 ft., T.D.; H.F.W.; D.&A.

McKnab's No. 1 Snyder, C W½ NW NW Sec. 15-34-3. Bart. 3,168-77 ft.; 2,000 ft. O.I.H.; rng. csg.

Markey & Mission's No. 1-A Hunt, SW SW NE Sec. 16-34-5. T.D. 1,758 ft.; killed gas; drlg. 2,340 ft.

I. W. Murfin's No. 1 Jarvis, N½ SW NE Sec. 19-31-5. S.D. 445 ft.

E. B. Shawver's No. 1-B Widener, C S½ SE NW Sec. 11-30-4. Miss. 2,825-40 ft.; T.D. 3,021 ft.; ran 7-in. lnr. at 3,025 ft.; S.D.

Earl Wakefield's No. 1-A Dunn, C W½ SE NE Sec. 3-35-5. S.S.O. 3,090 ft.; T.D. 3,123 ft.; D.&A.

Dickinson County

Midland Oil Co.'s No. 1 Haines, SE SW SW Sec. 23-16-4. S.D. 1,235 ft.

Douglas County

Kerlyn Oil Co.'s No. 1 Wise, C SE SW Sec. 28-12-20. T.D. 580 ft.; skdd. rig; drlg. 1,080 ft.

Ellis County

Gulf et al's No. 1 Sander, CWL SW SE Sec. 30-13-16w. Tpka. 2,940 ft.; cd. 3,118-23 ft.; S.S.O.

Ellsworth County

Aylward Prod. Co.'s No. 1 Haska, CEL SE SE Sec. 6-16-10w. Drlg. 2,615 ft.

Moore's No. 1 Little, C S½ SE NE Sec. 30-16-10w. Drlg. 1,950 ft.

Pryor & Lockhart's No. 1 Stratman, C W½ NW NW Sec. 1-17-10w. Lans. 2,937 ft.; Arb. 3,278 ft.; T.D. 3,297 ft.; H.F.O.

Sharon Drlg. Co.'s No. 1 Norotny, C N½ NW NE Sec. 32-16-10w. Drlg. 3,017 ft.

Greenwood County

Ashlock et al's No. 2-A Lindemood, NE NW SW Sec. 7-25-13. C.O. 925 ft.

Johnson County

McCain et al's No. 1 Doan, CEL NW SE Sec. 34-12-22. S.D. 1,433 ft.

Kearny County

Stanolind O. & G. Co.'s No. 1 Judd, C SE SE Sec. 15-21-38w. Drlg. 79 ft.

Kingman County

Gaddis et al's No. 1-A Shannon, CEL SE SW Sec. 11-27-10w. Drlg. 3,070 ft.

Leavenworth County

Wamhoff & Lebsack's No. 1 Moduska, C SE NE Sec. 36-8-20. Sg. sd. 975-90 ft.; Miss. 1,497-1,505 ft., T.D.; S.S.O.; D.&A.

McPherson County

Aladdin Pet. Co.'s No. 1 Bitikofer, CNL NE NW Sec. 1-20-1w. Lans. 2,315 ft.; Miss. 2,885 ft.; ga. 3,000,000 cu. ft. gas; F. 4 B.O.P.H.

H. & M. Drlg. Co.'s No. 1 Swenson, S½ SW NE Sec. 9-18-4w. U.R. 2,569 ft.

Marion County

Harrington & Lorieaux's No. 1 Belton SE SE NE Sec. 30-17-4. Miss. 2,398 ft.; pay 2,412-15 ft.; T.D. 2,414 ft.; H.F.O.

H. H. Royer's No. 1 Kroch, NE NE NW Sec. 28-18-4. O.T.D. 2,452 ft.; T.D. 2,464 ft.; in Miss.; N.S.

Pawnee County

Lauck & Moncrief's No. 1 Gilkison, CEL NE SW Sec. 21-22-16w. Drlg. 3,982 ft.

Phillips County

Cities Service Oil Co.'s No. 1 Ray, NE NW SE Sec. 32-5-20w. Loc.

Reno County

Dutton et al's No. 1 Green, SE SE SE Sec. 8-23-4w. Fsg. 2,622 ft.

Westgate-Greenland's No. 1 Schlickau, C N½ SE SW Sec. 8-25-4w. K.C. 2,760 ft.; Miss. 3,512 ft.; N.S.; T.D. 3,613-ft.; D.&A.

Rice County

C. L. Carlock's No. 1 Conrad, C W½ SW NE Sec. 15-20-6w. Drlg. 1,175 ft.

Derby Oil Co.'s No. 1 Monroe, CWL NW SE Sec. 26-18-9w. Lans. 2,903 ft.; Arb. 3,323-30 ft., T.D.; D.&A.

F. G. Holl's No. 1 Wilkens, NW NW NE Sec. 28-18-6w. Miss. 3,447 ft.; T.D. 3,514 ft.; D.&A.

J. N. Kaufman's No. 1 Hayes, CNL NE NE Sec. 25-21-7w. Lans. 2,930-65 ft.; Miss. 3,492-3,501 ft., T.D.; D.&A.

Rooks County

Cities Service Oil Co.'s No. 1 Hansen, SE SE NW Sec. 15-6-19w. Rlg.

Mitchell Drlg. Co.'s No. 1 Vererka, CSL SE SE Sec. 21-8-19w. W.O.C. 135 ft.

Wakefield et al's No. 1 Diehle, C N½ NW NW Sec. 4-9-17w. Drlg. 935 ft.

Russell County

Cities Service Oil Co.'s No. 1 Rochester, SE SE NE Sec. 11-13-15w. Drlg. 450 ft.

Gussman's No. 1 Mudd, CWL NW NE Sec. 16-15-15w. Drlg. 35 ft.

Haynes et al's No. 1 Driscoll, CNL SE SW Sec. 30-15-11w. Drlg. 1,170 ft.

Simpson Oil's No. 1 Rush, CWL NW SW Sec. 33-14-14w. Lans. 2,939 ft.; S.S.O.; U.R. 7-in. 3,080 ft.

Sedgwick County

G. A. Fuller's No. 1 Stilt, CSL SE NE Sec. 21-27-1w. S.S.O. 2,678 ft.; incr. at 2,798-2,806 ft.; P. 2 B.O. and 20 B.W. P.H.; pot. 23 B.O.; R.U. to D.D.

Schermerhorn Oil Co.'s No. 1 Sanders, NE NW SE Sec. 2-25-2. Miss. 2,835 ft.; S.O.; T.D. 2,887 ft.

Woodson County

Cooper's No. 1 Sowder, SE SE NW Sec. 31-25-14. Drlg. 457 ft.

MISSOURI

DeKalb County

American O. & G. Co.'s No. 1 Thompson, SW SW Sec. 30-58n-31w. Spd.

E. H. Lawhon's No. 1 Gottschall, C SE SE Sec. 18-59-32w. T.D. 700 ft.; waiting on heavier rig.

Holt County

Brin & Nathan's No. 1 Decker, C NW NW Sec. 1-61-38w. Drlg. below 1,165 ft.

Knox County

H. A. Black's No. 1 Champ, SW SW Sec. 21-62-10w. R.U.

Harris & Holmes' No. 1 Newkirk, NE NE Sec. 11-61-11w. Drlg. 60 ft.

Livingston County

Chillicothe Syndicate's No. 1 Linton, C W½ SE Sec. 15-56-25w. Drlg. below 440 ft.

Schuyler County

T. E. Baldwin's No. 2 Johnson, SW NE NE Sec. 21-65-15w. T.D. 680 ft.; run. csg.

IOWA

Page County

Smythe & McLaughlin's No. 1 Hook, C NE NW Sec. 16-39-35w. Loc.

NEBRASKA

Richardson County

Forest City Basin Synd.'s No. 1 Windle, SE NE SE Sec. 3-1n-15e. Pits.

Pawnee Royalty Co.'s No. 1 Boice, CSL N¼ NE NE Sec. 18-1n-16e. O.W.D.D.; Vla. 2,911 ft.; Arbuckle 3,268-3,300 ft.; T.D.; plugged back to Hunton lime at 2,279-87 ft. and may reacidize.

Pawnee Royalty Co.'s No. 1 Bucholz, C NW SW Sec. 17-1n-16e. T.D. 2,232 ft. in Hunton; flowing an average of 330 B.O. daily.

LOUISIANA

NORTH LOUISIANA

Bienville Parish

Ark. La. Gas Co.'s No. 1 Wimberly, 661 ft. N, 50 ft. W, C Sec. 15-16-10. Set surf. csg. 590 ft.; drlg. 610 ft.

Bossier Parish

Premier Dev. Co.'s No. 1 Mehaffey, 150 ft. S, 1,980 ft. W, NE cor. Sec. 27-19-11. Set 12½-in. csg. 155 ft.; W.O.C.

R. L. Reese et al's No. 1 Bellevue Ld. Co., 170 ft. E, 365 ft. N, C Sec. 27-20-11. Set 10-in. csg. 100 ft.

Triangle Drlg. Co.'s No. 2 Chatman, 1,977 ft. E, 1,995 ft. S, NW cor. Sec. 18-17-11. Set 5½-in. csg. 3,120 ft.; reset csg.; tstd. S.W.; cmtg. off 3,130 ft.

Caddo Parish

J. W. Bailey's No. 1 Ark. Fuel Oil Co., Sec. 1-20-16. Set 6⅝-in. csg. 1,330 ft.

D. T. Cauble's No. 1 Darnell, Sec. 17-22-16. Set 10-in. csg. 80 ft.; sd. 3,002-10 ft. and 3,012-52 ft.; S.O.; T.D. 3,204 ft.; set 5⅛-in. csg.; prep. tst. 3,012-52 ft.

J. M. Conner's No. 1 Williams, C NW NW Sec. 14-15-15. Cg. L.&sh. 5,112 ft.

Cooper Oil Co.'s No. 2 Stiles, Sec. 33-20-16. Set 10-in. csg. 50 ft.; W.O.C.

Davidson & Brown's No. 1 Wells, Sec. 10-21-15. Set 8-in. csg. 1,597 ft.; acd. with 4,000 gal.; pmpd.; S.O. 1,789 ft.; T.D. 3,000 ft.; set 5½-in. csg.; acd. with 3,000 gal.; tstd. S.W.; S.O.; pld. csg. and P.B. 2,006 ft.; tstd. S.W.; P.B. 1,875 ft. and tstd. S.W.; pmpd. S.W.; U.R.

J. P. Griffin's No. 2 Muslow, Sec. 26-21-16. Set 7-in. csg. 2,250 ft.; tstg. 2,266 ft.

L. Habfass' No. 1-B Knight Oil & Ld. Co., Sec. 1-21-16. R.U.

O. K. Hickman's No. 1 Lavine, Sec. 12-20-16. Set 7-in. csg. 1,311 ft.; W.O.C. 1,337 ft.

C. H. Lyons et al's No. 1 Ferris, 750 ft. N, 30 ft. E, SW cor. Sec. 35-18-14. Set 9-in. csg. 1,213 ft.; drlg. L.&sh. 4,083 ft.

P. N. McCullough's No. 1 Rudderdorf, Sec. 11-20-16. Set 5⅛-in. csg. 1,406 ft. acdzg. 1,609 ft.

McDonald & Campbell's No. 15 Youree, Sec. 13-20-15. R.U.

Magnolia Pet. Co.'s No. 21 Dean-Thigpen, Sec. 6-20-15. Set 10¾-in. csg. 41 ft.; set 6⅝-in. csg. 1,344 ft.; tstg. 1,520 ft.

R. Manziel's No. 2-B Muslow, Sec. 6-20-15. Set 6⅝-in. csg. 1,362 ft.; tstg. 1,535 ft.

R. L. Milam's No. 1 Bickham, Sec. 28-21-15. Set 5½-in. csg. 1,400 ft.; W.O.C. 1,562 ft.

N. W. Pannill's No. 1 Muslow, Sec. 32-21-15. Drlg. sh.&sd. 1,008 ft.

Sklar Oil Co.'s No. 2 Hobbs, Sec. 21-21-15. R.U.

Southern O. & G. Co.'s No. 3 Muslow, Sec. 5-20-15. Set 7-in. csg. 1,384 ft.

Stanolind O. & G. Co.'s No. 2 Dorian, Sec. 18-21-15. Set 5½-in. csg. 1,535 ft.; acd. 1,700 ft.

Stanolind O. & G. Co.'s No. 1 Noel est., Sec. 25-21-15. Set 8⅝-in. csg. 64 ft.; drlg. sh. 1,200 ft.

Jack Terrell's No. 1 Welch, Sec. 3-20-16. Set 4½-in. csg. 1,434 ft.; T.D. 1,540 ft. acd. 4,000 gal.; tstd. S.O. and S.W.

Texas Co.'s No. 10 A. Herndon, Sec. 14-21-15. Set 10-in. csg. 42 ft.; T.D. 1,494 ft.; P.B. to straighten hole.

Texas Co.'s No. 10 J. F. Herndon, Sec. 14-21-15. Set 6⅝-in. csg. 1,484 ft.; acd. with 4,000 gal.; pmpg. S.W.; S.O. 1,672 ft.

Texas Co.'s No. 5 Lake Front Oil Co., Sec. 8-20-15. Set 6⅝-in. csg. 1,318 ft.; tstg. 1,491 ft.

Texas Co.'s No. 1 La. Co. fee, Sec. 1-20-16. Set 7-in. csg. 1,337 ft.; T.D. 1,473 ft.

John W. Wall's No. 1 fee, Sec. 12-20-16. Set 6⅝-in. csg. 1,376 ft.; acd. 4,000 gal.; tstd. dry; reacd. 1,519 ft.

Catahoula Parish

Continental Oil Co.'s No. 1 Tensas, C N½ SW SW Sec. 12-9-7e. Set 10¾-in. csg. 1,120 ft.; drlg. 7,304 ft.

Claiborne Parish

Ohio Oil Co.'s No. 15 G. W. Taylor Acct. 1, 100 ft. S and W, C SE Sec. 15-23-8. Set 13⅜-in. csg. 980 ft.; drlg. anhy. 4,278 ft.

De Soto Parish

Foster & Smith's No. 1 McRae, 800 ft. S, 550 ft. W, C Sec. 5-12-16. Set 10-in. csg. 60 ft.; W.O.C.

Grant Parish

C. M. Bowers' No. 1 Goodpine Oil Co., C SE SE Sec. 13-9n-1w. Set 10-in. csg. 80 ft.; W.O.C.

John Pundt's No. 1 Reed est., 805 ft. S, 429 ft. W, NE cor. NW SW Sec. 10-7n-3w. Set 16-in. csg. 182 ft.; T. Wlx. 2,374 ft; T.D. 3,153 ft., sd.&sh.; S.D.; W.O.

La Salle Parish

O. K. Allen, Jr., et al's No. 1 Breedlove, C SW NE Sec. 32-11-3e. R.U.

Ark. Fuel Oil Co.'s No. 1-B Goodpine Oil Co., C NW SW Sec. 18-10n-3e. Drlg. sh. 1,220 ft.

Ark. Fuel Oil Co. and Placid Oil Co.'s No. 2 Goodpine, C SW NW Sec. 18-10-3e. Set 7-in. csg. 2,430 ft.; W.O.C. oil sds. 2,232-42 ft., 2,260-71 ft., and 2,379-82 ft.; perf. 2,221-24 ft.; no test; perf. 2,235-42 ft.; tstd. S.W.; S.O.; sqzd. and reperf. 2,255-60 ft.; flwg. in pits.

Coon & Esell's No. 1 Herring, 300 ft. W, 150 ft. S, NE SE SW Sec. 1-8n-3e. S.D. 55 ft.

E. F. Neely's No. 1 Lizendy, 330 ft. NW cor. NE NE Sec. 19-10-3. T. Wlx. 1,600 ft.; br. sh. 2,227-41 ft.; cd. oil sd.; T.D. 2,380 ft.; W.O.

Placid Oil Co.'s No. 4 Goodpine, C NE NW Sec. 18-20-3e. O.T.D. 2,242 ft.; set 7-in. csg. 2,435 ft.; Schimb.; T. Wlx. 1,630 ft.; oil sds. 2,234-50 ft., 2,258-66 ft., and 2,275-91 ft.; perf. 2,258-62 ft.; swbd. oil and S.W.; sqzd.

Placid Oil Co.'s No. 10 La. Cent. Lbr. Co., C NW SW Sec. 7-10n-3e. Took side-wall cores 3,880 ft.; set csg. 2,650 ft.; swbd. 7 to 8 B.F.P.H.; 20% S.W.; perf. 2,206-15 ft. and 2,186-92 ft.; tstd. S.O. and S.W.; W.O.; O.T.D. 3,914 ft.

Placid Oil Co.'s No. 14 La. Central, C SE SE Sec. 13-10-2. Schlmb.; T. Wlx. 1,579 ft.; oil sd. 2,225-32 ft.; set 7-in. csg. 2,415 ft., T.D.; W.O.C.

Fred Stovall, Tr.'s No. 1 Russell, 200 ft. NW cor. SE SE Sec. 25-10-1e. Set 10-in. csg. 60 ft.; W.O.C.

Red River Parish

J. E. Parham's No. 1 Haynes, 2,192 ft. N, 1,000 ft. E, SW cor. Sec. 20-13-10. 10-in. csg. 135 ft.; set 6-in. csg. 1,060 ft.; S.D. 1,280 ft.; rig rep.

Sabine Parish

Geo. L. Pace's No. 5 Logan Oil Co., 330 ft. SW cor. SW NW Sec. 26-10-13. Drlg. sh. 600 ft.

Roy Raines' No. 1 Carter, NW NW Sec. 27-9-11. Cg. 1,703 ft.

Sam Sklar's No. 1 First Natl. Bnk., 330 ft. SW cor. NW SW Sec. 29-8-12. Set 10-in. csg. 63 ft.; set 6-in. csg. 2,171 ft.; drlg. ch. 2,478 ft.

Sutton Zwolle Oil Co.'s No. 3 Sabine, 1,650 ft. S, 660 ft. E, NW cor. NE Sec. 23-7-14. S.G. 3,538-60 ft.; fsg. D.S. 3,560 ft.

J. E. Watts' No. 1 Patterson, 660 ft. SE cor. NE Sec. 33-10-11. Reported S.O. sd. 3,417-19 ft.; ran elec. surv. and W.O. 3,419 ft.

Tensas Parish

H. L. Hunt's No. 1 Chicago Mill & Lbr. Co., C NW NW Sec. 30-13-10. R.U.

Union Parish

Interstate Nat. Gas Co.'s No. 97 fee, Sec. 2-21-3. Set 12½-in. csg. 180 ft.; W.O.C.

Memphis Nat. Gas Co.'s No. 8 Lankford, Sec. 2-21-3. Set 6-in. csg. 2,141 ft.; W.O.C.

Nemours Corp.'s No. 1 Hollis, Sec. 10-21-3. Set 6-in. csg. 1,986 ft.; W.O.C.

Webster Parish

Hunt Oil Co.'s No. 1 Robt. Scott, C SE SE Sec. 19-21-9. Set 9⅝-in. csg. 5,604 ft.; drlg. sh. 8,237 ft.

Hunt Oil Co.'s No. 6 E. L. Stewart, 200 ft. NW C NE SE Sec. 30-21-10. Fsg. D.S. 5,435 ft.

Midstates Oil Corp.'s No. 1 Brenner-Beamsley unit, 100 ft. SE cor. SW SE Sec. 20-21-10. Set 9⅝-in. csg. 5,617 ft.; D. sd. 8,474-94 ft., oil; Bodcaw sd. 8,577-97 ft., gas and dist.; set 7-in. csg. 8,620 ft.; T.D. 8,624 ft.

West Carroll Parish

Hunter Co.'s No. 1 E. Lee unit, 1,980 ft. W, 660 ft. S. NE cor. Sec. 27-20-10. Set 13⅜-in. csg. 223 ft.; drlg. gbo.& sh. 1,400 ft.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co.'s No. 1 Boudoin, Sec. 64-12s-3e. 13⅜-in. csg. 1,776 ft.; T.D. 11,100 ft.; drlg. plug.

Anse La Butte—St. Martin Parish

Glassell & Glassell's No. 2-A Breaux, Sec 117-9s-5e. T.D. 4,576 ft.; 7-in. csg. 4,576 ft.

Glassell & Glassell's No. 1 Patin, Sec. 121-9s-5e. Drlg. sd. 3,830 ft.

Stanolind O. & G. Co.'s No. 1 Bergeron, Sec. 121-9s-5e. R.U.

Stanolind O. & G. Co.'s No. 1 L. D. Bergeron, Sec. 88-9s-5e. Drlg. sh.&L. 6,538 ft.

Bancroft—Beauregard Parish

Republic Prod. Co.'s No. 11 Lutcher Moore, Sec. 11-6s-13w. T.D. 7,525 ft.; perf. csg. 7,020-23 ft.; rec. oil and S.W.

Barataria—Jefferson Parish

California Oil Co.'s No. 1 La. Truck & Orange Co., Sec. 15-15s-23e. 10¾-in. csg. 2,011 ft.

California Oil Co.'s No. 1 Danciger-State, Sec. 2-16s-23e. Loc.

California Oil Co.'s No. 1 Zeringue-Community, Sec. 2-16s-23e. T.D. 8,278 ft.; make D.S.T.

Carter, Perrin & Brian's No. 1 Penniman-Westerfeldt, Sec. 15-15s-23e. R.U.

Carter, Perrin & Brian's No. 2 Ruttley-Wiseman, Sec. 2-16s-23e. Loc.

Geo. Conover's No. 1 Conover Community, Sec. 22-15s-23e. Loc.

Fohs Oil Co.'s No. 1 Conselman, Sec. 22-15s-23e. Loc.

Baton Rouge—East Baton Rouge Parish

Wm. Helis' No. 6-A L. S. U., Sec. 67-7s-1w. Drlg. sh. 5,340 ft.

Wm. Helis' No. 9 Nelson, Sec. 36-7s-1w. Loc.

Sugarfield Oil Co.'s No. 3 Community, Sec. 45-7s-1e. 10¾-in. csg. 1,315 ft.; T. D. 6,814 ft.; 7-in. csg. 6,800 ft.

Bayou Blue—Iberville Parish

T. G. Markley and Crosby Drlg. Co.'s No. 1 Baiste, Sec. 74-9s-10e. Cd. O.S. 1,723-51 ft.; 7-in. csg. 1,723 ft.; flwg. dry gas.

Superior Oil Co.'s No. 1 E. B. Schwing, Sec. 73-9s-10e. S.D. 8,340 ft.

Superior Oil Co.'s No. 3 Schwing Lbr. Co., Sec. 74-9s-10e. Loc.

Bayou Choctaw—Iberville Parish

Standard Oil Co. of La.'s No. 2 Cypress, Sec. 28-8s-11e. 10¾-in. csg. 2,250 ft.; T.D. 8,609 ft.; S.D.; high wtr.

Bayou des Glaise—Iberville Parish

Humble O. & R. Co.'s No. 3-B Wilberts & Sons, Sec. 78-8s-8e. R.U.

Bayou Pigeon—Iberia Parish

Plymouth Oil Co.'s No. 1 Leblanc, Sec. 13-12s-10e. Loc.

Bayou des Allemands—La Fourche Parish

Amerada Pet. Corp.'s No. 4 Gheens Realty, Sec. 56-15s-20e. Bldg. drk.

Bay St. Elaine—Terrebonne Parish

Jefferson Lake Sulphur Co.'s No. 1 Salt Dome Royalties, Sec. 8-22s-18e. Loc.

Caillou Island—Terrebonne Parish

Texas Co.'s No. 66 State, Sec. 17-23s-20e. T. salt 6,351 ft.; T.D. 8,089 ft.; abd.

Texas Co.'s No. 68 State, Sec. 17-23s-20e. Drlg. sh. 4,660 ft.

Cameron Meadows—Cameron Parish

Magnolia Pet. Co.'s No. 28 Cameron Meadows, Sec. 21-14s-13w. Cg. sd.& sh. 5,597 ft.

Chacahoula—La Fourche Parish

Sun Oil Co.'s No. 2 Cypress, Sec. 75-15s-15e. 13⅜-in. csg. 1,815 ft.; drlg. sh. 3,420 ft.

Sun Oil Co.'s No. 8 Dibert, Stark & Brown Cypress Co., Sec. 70-15s-15e. 10¾-in. csg. 1,831 ft.; drlg. sh. 5,424 ft.

Chalkley Field—Cameron Parish

Humble O. & R. Co.'s No. 8-A Hanszen, Sec. 9-12s-6w. T.D. 8,848 ft.; abd.

Humble O. & R. Co.'s No. 9 Hanszen, Sec. 9-12s-6w. Drlg. sh. 2,806 ft.

Shell Oil Co., Inc.'s No. 1 Coastal Club, Cg. sd. 10,054 ft.

Shell Oil Co., Inc.'s No. 7-A Hanszen, Sec. 20-12s-6w. T.D. 8,943 ft.; 5-in. csg. 8,943 ft.; P.B. 8,936 ft.

Chenoyville—Rapides Parish

Amerada Pet. Corp.'s No. 9 Weil, Sec. 54-1s-2e. Cg. 5,675 ft.

S. W. Richardson's No. 12 Weil, Sec. 53-1s-2e. T.D. 5,797 ft.; 5½-in. csg. 5,796 ft.; perf. csg. 5,725-43 ft.; I.P. 390 B. P.D.; ¼-in. ck.

S. W. Richardson's No. 13 Weil, Sec. 55-1s-2e. Drlg. sh. 2,846 ft.

Darrow—Ascension Parish

Humble O. & R. Co.'s No. 3-B Community, Sec. 47-10s-2e. T.D. 9,259 ft.; P.B.; sdtrkd.; drlg. sh. 9,026 ft.

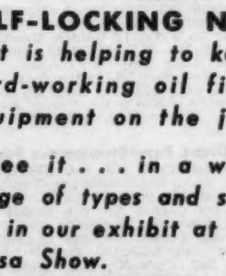
Humble O. & R. Co.'s No. 29 Community, Sec. 30-10s-2e. Loc.

Kiva Oil Co.'s No. 1 Duplessis, Sec. 68-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co.'s No. 11 State, Sec. 32-21s-16e. 10¾-in. csg. 1,751 ft.; drlg. sdy. sh. 6,593 ft.

Texas Co.'s No. 24 State, Sec. 5-22s-16e. Loc.



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Edgerly—Calcasieu Parish

Emerson Oil Corp.'s No. 3 Stanolind fee Sec. 28-9s-11w. Sdtrkd.; T.D. 3,680 ft.; 5½-in. csg. 3,665 ft.; trying to sdtrk.

Eola—Avoyelles Parish

Amerada Pet. Corp.'s No. 3 Avovelles Sec. 5-2s-3e. T.D. 8,619 ft.; abd.

Amerada Pet. Corp.'s No. 4 Sam Cerami, Sec. 6-2s-3e. Drlg. sh, 4,916 ft.

Amerada Pet. Corp.'s No. 3 Irion, Sec 6-2s-3e. T.D. 8,615 ft.

Amerada Pet. Corp.'s No. 4 Irion, Sec. 7-2s-3e. R.U.

Harry Bass et al's No. 2 Richie. Drlg. sh. 2,630 ft.

Gulf Oil Corp.'s No. 3 Mouliere, Sec. 1-2s-2e. Drlg. sh, 7,956 ft.

Lester A. Lemoine's No. 1 fee, Sec. 41-1s-3e. Loc.

Geo. Lilly's No. 2 Dent, Sec. 1-2s-2e. Loc.

S. W. Richardson's No. 12 Haas Inv. Co., Sec. 8-2s-3e. Drlg. sh. 8,416 ft.

S. W. Richardson's No. 1-B Haas Inv. Co., Sec. 42-1s-2e. Drlg. sh. 3,467 ft.

Erath—Vermilion Parish

Strake Pet. Co., Inc.'s No. 1 V. L. Caldwell, Sec. 41-13s-4e. Drlg. sh. 5,730 ft.

Fausse Point—Iberia Parish

Sun Oil Co.'s No. 2 Planters Lbr. Co., Sec. 27-11s-8e. 10¾-in. csg. 1,436 ft. drlg. sh. 4,220 ft.

Texas Co.'s No. 7 State, Sec. 35-11s-8e T. salt 7,001 ft.; T.D. 7,005 ft.; P.B.; sdtrkd.; drlg. sh. 5,360 ft.

Sun Oil Co.'s No. 1 Walet & King, Sec. 26-11s-8e. Sd. 1,105-50 ft.; tstg.

Garden Island—Plaquemines Parish

Texas Co.'s No. 44 State, Sec. 49-23s-33e. T.D. 5,297 ft.; 7-in. csg. 4,997 ft.

Gibson—Terrebonne Parish

Shell Oil Co., Inc.'s No. 8 Pelican, Sec 35-17s-15e. T.D. 11,440 ft.; P.B. 9,490 ft.

Gillis—Calcasieu Parish

Fohs Oil Co.'s No. 2-A M. P. Erwin, Sec. 14-9s-8w. T.D. 7,236 ft.; 5½-in. csg. 7,236 ft.; perf. csg. 7,179-91 ft.; tstg.; rec. S.W.; P.B. 7,185 ft.

Union Sulphur Co.'s No. 9 Kaufman, Sec 7-9s-7w. T.D. 7,149 ft.; P.B.; sdtrkd.; drlg. sh. 4,500 ft.

Golden Meadow—La Fourche Parish

Bennett O. & R. Co.'s No. 2 Authement. Sec. 12-19s-22e. Drlg. sdy. sh. 2,500 ft.

Bennett O. & R. Co.'s No. 1 Guilbeau. Sec. 2-19s-22e. Drlg. sh. 1,510 ft.

Bennett O. & R. Co.'s No. 4 Leo Lafont. Sec. 2-19s-22e. 16-in. csg. 78 ft.; T.D. 5,196 ft.; 7-in. csg. 5,196 ft.; perf. csg. 5,174-82 ft.; I.P. 108 B.P.D.; 9/64-in. ck.

Berkshire Oil Co.'s No. 1 Nicol, Sec. 9-19s-22e. 10¾-in. csg. 2,362 ft.; T.D. 8,935 ft.; fsg.

Brown & Woods' No. 1 Guilbeau, Sec 2-19s-22e. Drlg. sh, 1,394 ft.

Temple Hargrove's No. 4 Gaspard & Rizan, Sec. 9-19s-22e. 10¾-in. csg. 590 ft.; T.D. 5,510 ft.; 5½-in. csg. 5,490 ft.; perf. csg. 5,158-73 ft.; I.P. 195 B.P.D., 10/64-in. ck.

Jim McMurray Prod. Co.'s No. 1 Orgeron, Sec. 12-19s-22e. R.U.

M. H. Marr et al's No. 1 Alario Community, Sec. 2-19s-22e. T.D. 2,665 ft.; 5-in csg. 2,640 ft.; would not flow; pulling screen.

M. H. Marr et al's No. 2 B. & D. unit. Sec. 17-19s-22e. Road comp.

M. H. Marr et al's No. 3 B.&D. unit, Sec. 12-19s-22e. R.U.

Martex Oil Corp. of La.'s No. 3 Falgout Holding Co., Sec. 9-19s-22e. T.D. 5,180 ft.; 5¾-in. csg. 5,156 ft.; I.P. 113 B.P.D.; 10/64-in. ck.

Martex Oil Corp.'s No. 2-C Rebstock Community, Sec. 2-19s-22e. T.D. 2,670 ft.; run csg.

Geo. O'Dwyer et al's No. 2 La Fourche Realty Co., Sec. 21-19s-22e. T.D. 5,177 ft.; 5½-in. csg. 5,175 ft.; perf. csg. 5,156-67 ft.; I.P. 324 B.P.D.; 10/64-in. ck.

S. Rhodes' No. 1 Nickerson, Sec. 12-9s-8w. Drlg. sh. 5,520 ft.

C. R. Schuster's No. 1 Broussard, Sec. 2-19s-22e. T.D. 2,620 ft.; fsg.

Terouche Oil Co.'s No. 2 Cheramie, Sec. 12-19s-22e. Drlg.

Texas Co.'s No. 12 Golden Meadow, Sec 78-19s-21e. T.D. 9,250 ft.; rmg.

Texas Co.'s No. 11 L.L.&E., Golden Meadow, Sec. 78-19s-21e. T.D. 5,182 ft.; 7-in. csg. 5,158 ft.; flwg. oil and S.W.

Texas Co.'s No. 6 La Terre, Sec. 1-20s-21e. 10¾-in. csg. 2,050 ft.; drlg. sh. 9,130 ft.

Grand Bay—Plaquemines Parish

Gulf Ref. Co.'s No. 2-A Grand Prairie Lv. dist., Sec. 48-20s-18e. T.D. 9,72 ft.; 5½-in. csg. 9,718 ft.

Gulf Oil Corp.'s No. 7-A Grand Prairie Lv. Dist., Sec. 5-20s-19e. Loc.

Gulf Oil Corp.'s No. 8-A Grand Prairie Dist., Sec. 5-20s-19e. Loc.

Gulf Ref. Co.'s No. 9-A Grand Prairie Lv. dist., Sec. 31-19s-19e. Loc.

Gulf Oil Corp.'s No. 5 State QQ, Sec. 31-19s-19e. Loc.

Gulf Ref. Co.'s No. 6 State, Sec. 5-20s-19e. T.D. 8,130 ft.; 5½-in. csg. 8,130 ft.; tstg.

Texas Co.'s No. 3 State-Lookout Pass, Sec. 6-20s-19e. Drlg. sh. 1,602 ft.

Grand Lake—Cameron Parish

Amerada Pet. Corp.'s No. 8 State, Twp. 13s-4w. T.D. 9,000 ft.; 5½-in. csg. 8,999 ft.; perf. csg. 8,888-8,400 ft.; I.P. 296 B.P.D.; 5/32-in. ck.

Superior Oil Co.'s No. 12 State, Twp. 11s-13w. T.D. 8,990 ft.; perf. csg. 8,377-91 ft.; I.P. 315 B.P.D.; 10/64-in. ck.

Hackberry—Cameron Parish

Hanson & Abercrombie's No. 2 Verdin, Sec. 36-12s-10w. Cg. sd. 6,474 ft.

Stanolind O. & G. Co.'s No. 22 Cameron Parish, Sec. 16-12s-10w. Drlg. sh.&L. 5,288 ft.

Stanolind O. & G. Co.'s No. 31 Gulf Ld., Sec. 25-12s-11w. Drlg. sh. 7,068 ft.

Superior Oil Co.'s No. 10 Vincent, Sec. 30-12s-10w. Drlg. sh. 8,020 ft.

Happytown—Iberville Parish

Shell Oil Co., Inc.'s No. 1 Schwing Lbr & Shingle Co., Sec. 85-7s-8e. T.D. 10,315 ft.; rmg.

Horseshoe Bayou—St. Mary Parish

Texas Co.'s No. 4 State, Sec. 23-17s-9e. Cg. sh.&L. 12,006 ft.

Jeanerette—St. Mary Parish

Cajun Oil Co.'s No. 1 Roanes Sugar Co., Sec. 58-13s-8e. Drlg.

Herton Oil Co.'s No. 10 Banta, Sec. 40-13s-9e. Drlg. sh. 9,220 ft.

Jefferson Island—Iberia Parish

Texas Co.'s No. 5 Jefferson Island, Sec. 58-12s-5e. 10¾-in. csg. 2,209 ft.; drlg. sh.&L. 5,112 ft.

Texas Co.'s No. 3 State, Twp. 12s-5e T.D. 7,749 ft.; P.B.; drlg. sh.&L. 6,760 ft.

Jennings—Acadia Parish

Glassell-Glassell's No. 8 McFarlain, Sec. 41-9s-2w. T.D. 7,429 ft.; 6-in. csg. 7,270-80 ft. and 7,315-55 ft.; I.P. 250 B.P.D.; 10/64-in. ck.

Port City Oil Co.'s No. 26 Haywood, Sec. 41-9s-2w. Drlg. sd. 840 ft.

Shell Oil Co., Inc.'s No. 11 Community, Sec. 40, 10¾-in. csg. 1,721 ft.; drlg. sh. &L. 6,782 ft.

Stanolind O. & G. Co.'s No. 20 Houssiere-Latreille, Sec. 47-9s-2w. R.U.

Lafitte—Jefferson Parish

Texas Co.'s No. 15 Lafitte, Sec. 20-17s-24e. T.D. 10,135 ft.; 7-in. csg. 10,123 ft.; perf. csg. 9,475-9,505 ft.; rec. S.W.; perf. csg. 4,805-10 ft.; sanded up; W.O.

Texas Co.'s No. 16 L.L.&E., Lafitte, Sec. 17-17s-24e. Drlg. sh. 6,700 ft.

Texas Co.'s No. 6-A Madison Realty Co., Sec. 17-17s-24e. T.D. 10,180 ft.; 7-in. csg. 10,180 ft.; perf. csg. 10,070-10,105 ft.; I.P. 801 B.P.D.; ¼-in. ck.

Texas Co.'s No. 6 Marrero, Sec. 21-17s-24e. Loc.

La Fourche Crossing—La Fourche Parish

Lisbon-Iberia Oil Co.'s No. 1 Joe Bergeron, Sec. 16-15s-17e. Loc.

Lisbon-Iberia Oil Co.'s No. 1 Prosper Thibodaux, Sec. 17-15s-17e. Drlg. by fish.

Lake Mongoulois—St. Martin Parish

Texas Co.'s No. 8 State, Sec. 10-10s-9e. Drlg. sh. 9,475 ft.

Lake Pelto—Terrebonne Parish

Texas Co.'s No. 31 State, Sec. 8-23s-18e. T.D. 5,761 ft.; P.B.; sdtrkd.; drlg. sh. 4,939 ft.

Leeville—La Fourche Parish

Texas Co.'s No. 73 Leeville, Sec. 27-21s-22e. Drlg. sd.&L. 7,258 ft.

Neale—Beauregard Parish

Atlantic Ref. Co.'s No. 1 Musser-Davis Lbr. Co., Sec. 26-3s-11w. R.U.

Atlantic Ref. Co.'s No. 1 Spiers, Sec. 26-3s-11w. Drlg. sh. 5,637 ft.

New Iberia—Iberia Parish

Acadian Prod. Co.'s No. 4 E. T. Weeks, Sec. 51-12s-7e. Loc.

Wm. Helis' No. 10 Schwing, Sec. 56-12s-7e. T. salt 8,952 ft.; T.D. 8,960 ft.; 6-in. csg. 8,883 ft.; perf. csg. 8,764-88 ft.; flwd. S.W. and gas.

Wm. Helis' No. 1 Bolliver, Sec. 56-12s-7e. Drlg. sdy. sh. 910 ft.

Texas Co.'s No. 2 Bryant, Sec. 25-12s-7e. R.U.

Texas Co.'s No. 7 Bryant, Sec. 25-12s-7e R.U.

Texas Co.'s No. 16 Duke, Sec. 26-12s-7e. Loc.

Texas Co.'s No. 17 Duke, Sec. 26-12s-7e. Drlg. sh.&L. 5,870 ft.

Texas Co.'s No. 2 Hebert, Sec. 25-12s-7e. 10¾-in. csg. 1,935 ft.; T.D. 8,535 ft.; 7-in. csg. 8,515 ft.; flwd. oil and S.W. perf. csg. 8,470-82 ft.; flwg. oil and S.W.

Texas Co.'s No. 2 Smith, Sec. 71-12s-7e. T.D. 9,791 ft.; 7-in. csg. 9,791 ft.; perf. csg. 9,212-26 ft.; flwd. S.W.; abd.

North Crowley—Acadia Parish

Humble O. & R. Co.'s No. 7 Ohlenforst, Sec. 34-8s-1e. T.D. 8,800 ft.; 5½-in. csg. 8,786 ft.

Humble O. & R. Co.'s No. 5 Stakes, Sec. 33-8s-1e. Drlg. sh. 8,094 ft.

Humble O. & R. Co.'s No. 6 Stakes, Sec. 33-8s-1e. Drlg.

North Elton—Calcasieu Parish

W. T. Burton's No. 1 Calcasieu Natl Bnk., Sec. 23-6s-3w. Drlg. sh. 5,687 ft.

W. T. Burton's No. 1 Pine Farms, Sec. 24-6s-3w. Loc.

Paradis—St. Charles Parish

Humble O. & R. Co.'s No. 1 Matthews & Olivera, Sec. 4-14s-20e. Loc.

Texas Co.'s No. 4 L.L.&E. Paradis, Sec. 6-14s-20e. 10¾-in. csg. 2,607 ft.; drlg. sh. 9,916 ft.

Texas Co.'s No. 1 Sunset Realty & Planting Co., Sec. 38-14s-20e. 10¾-in. csg. 2,716 ft.; drlg. sh. 8,561 ft.

Plumb Bob—St. Martin Parish

Texas Co.'s No. 13 St. Martin Ld. Co., Sec. 21-8s-7e. T.D. 8,464 ft.; 7-in. csg. 8,464 ft.; perf. csg. 8,345-58 ft.; rec. S.W.; 40-min. D.S.T.

Texas Co.'s No. 14 St. Martin, Sec. 21-8s-7e. Loc.

Port Barre—St. Landry Parish

Gulf Ref. Co.'s No. 16 Wilson Cochran, Sec. 4-6s-5e. Drlg. sh. 1,546 ft.

McDannald Oil Co.'s No. 1 Sibille, Sec 7-6s-6e. T.D. 6,074 ft.; P.B.; sdtrkd.; drlg. sh. 4,820 ft.

McDannald Oil Co.'s No. 2 Sibille, Sec 7-6s-6e. Loc.

Pan American Prod. Co.'s No. 6 Garland, Sec. 4-6s-5e. T.D. 6,042 ft.

Texas Co.'s No. 28 Bouney Bay, Sec. 4-6s-5e. Drlg. sh. 4,889 ft.

Potash—Plaquemines Parish

Humble O. & R. Co.'s No. 43 Orleans Lv. Bd., Sec. 14-18s-15e. T.D. 8,025 ft.; 7-in. csg. 8,065 ft.

Quarantine Bay—Plaquemines Parish

Gulf Oil Corp.'s No. 6-A Orleans Lv. Bd., Sec. 7-19s-17e. Cg. sdy. sh. 8,844 ft.

Gulf Ref. Co.'s No. 17 State, Twp. 19s-17e. Drlg. sdy. sh. 8,155 ft.

Gulf Ref. Co.'s No. 18 State, Twp. 19s-17e. Loc.

Sorrento—Ascension Parish

Sorrento Synd.'s No. 2 L. L. Bernard Sec. 22-10s-4e. R.U.

South Jennings—Jeff Davis Parish

W. H. Collins' No. 1 Richard, Sec. 22 10s-3w. Drlg.

Stanolind O. & G. Co.'s No. 1 W. H. Adams, Sec. 14-10s-3w. Drlg. sd. 9,227 ft.

Stanolind O. & G. Co.'s No. 1 E. K. Atwell, Sec. 14-10s-3w. Loc.

Stanolind O. & G. Co.'s No. 1 L. Remage, Sec. 9-10s-3w. T.D. 10,953 ft.; fsg.

South Roanoke—Jeff Davis Parish

Continental Oil Co.'s No. 2 Fay, Sec. 31-10s-3w. Drlg. sh. 8,287 ft.

Continental Oil Co.'s No. 4 Sturdevant Sec. 35-10s-4w. T.D. 9,978 ft.; 7-in. csg. 9,870 ft.

Starks—Calcasieu Parish

W. T. Burton & McLean's No. 2 Industrial Lbr. Co., Sec. 29-9s-12w. T.D. 5,849 ft.; T. sd. 5,833 ft.; rec. S.W. and skum of oil; pull tbg.

W. T. Burton Oil Co.'s No. 1 Lutcher Moore Lbr. Co., Sec. 30-9s-12w. T.D. 4,810 ft.; 5½-in. csg. 3,990 ft.; tstg.

Sweet Lake—Cameron Parish

Pure Oil Co.'s No. 17 Stanolind O. & G. Co., Sec. 12-13s-8w. 9⅝-in. csg. 1,431 ft.

Timbalier Bay-La Fourche

Gulf Ref. Co.'s No. 6 State, Sec. 36-23s-21e. Loc.

Valentine—La Fourche Parish

T. G. Markley et al's No. 2 Dousson, Sec. 100-17s-20e. Drlg. 2,830 ft.

Venice—Plaquemines Parish

Tide Water Asso. Oil Co.'s No. 1 C. L. Johnson, Sec. 35-21s-30e. T.D. 8,303 ft.; run 7-in. csg.

Tide Water Asso. Oil Co.'s No. 12 Manhattan Ld. Co., Sec. 35-21s-30e. Loc.

Vermilion Bay—Iberia Parish

Texas Co.'s No. 4-B Vermilion Bay, Twp. 16s-15e. 11¾-in. csg. 4,454 ft.; T. salt 5,855 ft.; T.D. 7,546 ft.; fsg.

Villa Platte—Evangeline Parish

Amerada Pet. Corp.'s No. 1 J. Foret, Sec. 1-4s-2e. Drlg. sh.&L. 8,589 ft.

Continental Oil Co.'s No. 6 Deville, Sec 3-4s-2e. T.D. 9,005 ft.; perf. csg. 8,788-96 ft.; I.P. 110 B.P.D.; ¼-in. ck.

Continental Oil Co.'s No. 3 Fontenot, Sec. 47-3s-2e. Drlg. sd.&sh. 7,285 ft.

Continental Oil Co.'s No. 5 Hirsch, Sec. 44-3s-2e. Drlg. sh, 8,955 ft.

Contineintal Oil Co.'s No. 4 Tate, Sec. 1-4s-2e. Drlg. sh. 7,395 ft.

Continental Oil Co.'s No. 1 J. E. Vidrine, Sec. 47-3s-2e. Drlg. sh. 8,245 ft.

Danciger O. & R. Co.'s No. 3 Vidrine, Sec. 1-4s-2e. R.U.

J. K. Hughes' No. 2 Ortego, Sec. 36-3s-2e. Cg. sd. 10,157 ft.

West Cote Blanche—St. Mary Parish

Texas Co.'s No. 2 State, West Cote Blanche, Twp. 16s-8e. Cg. sh.&sdy. L. 4,259 ft.

Texas Co.'s No. 3 State, West Cote Blanche, Twp. 16s-6e. Loc.

West Gueydan—Vermilion Parish

Magnolia Pet. Co.'s No. 1 Benoit, Sec. 5-12s-2w. R.U.

White Castle—Iberville Parish

Jolly Pet. Corp.'s No. 1 E. B. Adams, Sec. 1-11s-12e. T.D. 9,002 ft.; 7-in. csg. 9,001 ft.; P.B. 8,896 ft.

Shell Oil Co., Inc.'s No. 16 Wilbert, Sec 8-11s-12e. T.D. 6,465 ft.; P.B. 6,385 ft.

Woodlawn—Jeff Davis Parish

Union Sulphur Co.'s No. 2 Johnson, Sec 12-9s-6w. T.D. 8,102 ft.; 7-in. csg. 8,102 ft.; perf. csg. 8,092-97 ft.; I.P. 367 B.P.D.; 11/64-in. ck.

Union Sulphur Co.'s No. 1 T. Miller, Sec 6-9s-5w. Loc.

S. LOUISIANA WILDCATS

Acadia Parish

Humble O. & R. Co.'s No. 1 F. E. Atkinson, Sec. 26-10s-1e. Drlg. sd. 6,335 ft.

Assumption Parish

Shell Oil Co., Inc.'s No. 1 A. L. Patereau, Unit 1, Sec. 66-16s-14e. T.D. 2,502 ft.; run surf. csg.

Beauregard Parish

Danciger O. & R. Co.'s No. 1 G. E. Le-Roy, Sec. 2-3s-9e. Loc.

Loffland Bros.' No. 3 Long Bell Lbr Co., Sec. 24-5s-11w. Drlg. sh. 10,146 ft.

Cameron Parish

Phillips Pet. Co.'s No. 1 Miami Corp., Sec. 11-4s-6w. Well tried to blow out; stk. D.S.; sdtrkd. 3,775 ft.; 9⅝-in. csg. 9,583 ft.; cg. sh. 10,270 ft.

Superior Oil Co.'s No. 2 State, Twp. 14s-9w. T. salt 3,614 ft.; drlg. salt 7,375 ft.

East Baton Rouge Parish

Farris & Golding Drlg. Co.'s No. 1 Paulet, Sec. 58-8s-1e. 10¾-in. csg. 1,780 ft. S.D. 6,828 ft.

Iberia Parish

H. J. De Arman's No. 1 Burleigh, Sec. 21-13s-7e. Drlg. sh. 443 ft.

Iberville Parish

Falcon-Seaboard's No. 1 Folse, Sec. 11s-13e. Drlg.

Shell Oil Co., Inc.'s No. 1 Southwood, Sec. 20-9s-2e. Cg. sh. 9,950 ft.

Jeff Davis Parish

H. M. Naylor's No. 1 Acadia Dev. Co., Sec. 12-10s-2w. 10¾-in. csg. 2,115 ft.; 9⅝-in. csg. 9,006 ft.; T.D. 10,000 ft.; 7-in. csg. 10,000 ft.; prep. to test 9,114-25 ft.

Union Sulphur Co.'s No. 1 Eba Miller, Sec. 6-9s-5w. Loc.

Jefferson Parish

Vendome Pet. Co.'s No. 1 Coulon, Sec. 15-15s-23e. Drlg. sh, 8,577 ft.

La Fourche Parish

Ernest Cockrell's No. 1 La Fourche Ld. Co., Sec. 32-18s-22e. 10¾-in. csg. 650 ft.; T.D. 2,988 ft.; prep. to res. drlg.

Gulf Oil Corp.'s No. 1-B Bowie Lbr. Co., Sec. 69-15s-19e. Cg. sh. 12,086 ft.

Humble O. & R. Co.'s No. 1 Caldwell Sugars, Inc., Sec. 115-14s-15e. 13⅜-in csg. 2,988 ft.; 9⅝-in. csg. 10,921 ft.; drlg. sd. 11,632 ft.

Plaquemines Parish

Gulf Oil Corp.'s No. 1-E Buras Lv. dist., Sec. 1-23s-10e. T.D. 9,287 ft.; rmg.

California Co.'s No. 1 Delta Minerals, Sec. 2-15s-24e. 13⅜-in. csg. 2,028 ft.; T.D. 10,246 ft.; 7-in. csg. 10,188 ft.; perf. csg. 9,963-74 ft.; flwd. 320 B.F.P.D.; ¼-in. ck.; 20 to 30% S.W.; killed; pull screen; well flwd. 300 B.F.P.D., 25 to 40% S.W.; sqzd. perf.

Rapides Parish

Gulf States' No. 1 Long Bell Lbr. Co., Sec. 46-4n-3w. R.U.

R. L. Wheelock et al's No. 1 H. V. Rushing, Sec. 1-2n-1s. Loc.

St. Charles Parish

R. H. Parker et al's No. 1 C. L. Thompson, Sec. 87-13s-20e. 10¾-in. csg. 2,599 ft.; drlg. sh. 10,876 ft.

St. James Parish

St. James Oil Co.'s No. 1 Celstine Plant, Sec. 74-11s-4e. R.U.

St. Landry Parish

S. A. Thompson's No. 1 Wm. Murphy, Sec. 22-5s-6e. 10¾-in. csg. 1,209 ft.; drlg. sh. 5,926 ft.

St. Mary Parish

Herton Oil Co.'s No. 1 H. Gonsoulin, Sec. 68-13s-8e. Drlg. sh. 110 ft.

Morgan City Oil Co.'s No. 1 Adeline Sugar Co., Sec. 33-13s-9e. Drlg. sh. 1,477 ft.

Sun Oil Co.'s No. 1 Belle Isle, Sec. 6-18s-11e. Bldg. drk.

Terrebonne Parish

Barnsdall Oil Co.'s No. 1 Nelson, Sec. 2-21s-11e. 10¾-in. csg. 2,767 ft.; 8⅝-in. csg. 10,505 ft.; T.D. 11,731 ft.; D.S.S.; P.B. 8,500 ft.

Stanolind O. & G. Co.'s No. 1 State (Bay Junop), Sec. 35-21s-14e. Loc.

Texas Co.'s No. 5 State, Coon Point, Twp. 23s-14e. Loc.

Vermilion Parish

Union Oil Co. of Calif.'s No. 1 Walter White hrs., Sec. 17-15s-1e. 13⅜-in. csg. 2,800 ft.; T.D. 10,348 ft.; fsg.

ARKANSAS

Clark County

J. H. Coker and J. P. Grieves' No. 1 C. McClellan, 330 ft. NW cor. NW SE Sec. 11-20-21. S.D. 1,326 ft.; repr. drk.

Coker Oil Corp.'s No. 4 H. H. and H. C. Cabe, 100 ft. E of No. 2, Sec. 5-10s-21w. Set 8¼-in. csg. 20 ft.; reported

S.O. 283-87 ft.; S.D.; W.O.; T.D. 480 ft.
W. P. Wilson's No. 1 Hamilton & Mathews, 50 ft. W, C SE NE Sec. 31-10s-20w. S.D. high wtr. 1,622 ft.

Columbia County

Barnsdall Oil Co.'s No. 1 El Dorado & Wesson R. R. Co., C NW SW Sec. 5-10-1S. Set 16-in. csg. 166 ft.; W.O.C.
Mid-Continent Pet. Corp.'s No. 1 J. Keith, C SW NW Sec. 16-1S-22. M.I. rig.
Southwood Oil Co.'s No. 2 H. C. Couch, C S½ SW SW and S½ SE SW Sec. 23-17-20. Drlg. 3,440 ft.
Standard Oil Co.'s No. 1-C Gunnels unit, 660 ft. N, 595 ft. E. SW cor. SE NW Sec. 20-17-19. Set 9⅝-in. csg. 2,173 ft.; drlg. sh. 7,053 ft.
Standard Oil Co.'s No. 2-B Longino, Sec. 19-17-19. Rng. 6-in. csg. 7,551 ft.
Tide Water Asso. Oil Co. and Seaboard Oil Co.'s No. 2 C. H. Murphy et al, C SE NE Sec. 14-18-19. Set 9⅝-in. csg. 2,500 ft.; W.O.C. 2,510 ft.
Tide Water Asso. Oil Co. and Seaboard Oil Co.'s No. 1 Talley, C SE NW Sec. 14-18-19. Set 9⅝-in. csg. 2,487 ft.; drlg. 2,614 ft.
G. H. Vaughn's No. 1 J. M. Talley, C N½ N½ SE Sec. 15-18-19. Drlg. 3,980 ft.

Dallas County

H. H. McBride et al's No. 1 Southern Kraft Corp., C SE SW Sec. 16-2-16. M.I.M.

Faulkner County

Cato Oil Co., Inc.'s No. 1 R. R. Harrell, 330 ft. SE cor. SE SW Sec. 35-4n-12w. T.D. 2,438 ft.; U.R. csg. and set 7-in. csg. 2,370 ft.; bailing to test.

Lafayette County

Atlantic Ref. Co.'s No. 1 Bodcaw Lbr. Co., Sec. 29-17-23. Set 16-in. csg. 341 ft.; set 9⅝-in. 4,222 ft.; cd. 7,308-16 ft.; S.O.; drlg. 8,190 ft.
East Texas Ref. Co. et al's No. 2 E. P. Davis, 525 ft. N, 660 ft. W, SE cor. NW NE Sec. 19-16-23. Set 10¾-in. csg. 98 ft.; W.O.C. 108 ft.
J. & J. Oil Co.'s No. 1 J. E. Barnes, 345 ft. W, 615 ft. N, SE cor. Sec. 4-16-24. Set 10¾-in. csg. 218 ft.; W.O.C.

Lonoke County

Lunnon Howell & Ford's No. 1 City of Cabot, C NE Lot 1, Blk. 6, Sec. 18-4n-9w. Set 4¾-in. csg. 878 ft.; drlg. 1,146 ft.
J. F. Russell's No. 1 J. T. Gunter, 440 ft. N, 577 ft. W, SE cor. Sec. 17-5n-10w. Drld. sd. S.S.O. 2,231-45 ft.; S.D. 2,312 ft.; installing drlg. line.

Miller County

F. W. Burford's No. 1 Ritchie, 330 ft. N, 1,650 ft. W, SE cor. Sec. 7-20-27. Drlg. L.&sh. 5,046 ft.
K. E. Jennings and J. J. Oil Co.'s No. 1 H. T. Wood, 520 ft. S, 255 ft. W, NE cor. Sec. 33-18-28. Drlg. sd.&sh. 3,623 ft.
Red Iron Drlg. Co.'s No. 1 Philyaw, 330 ft. NW cor. NE SE Sec. 7-17-26. R.U.
Standard Oil Co. of La.'s No. 1 W. E. Sturgis, 660 ft. S and W, C Sec. 1-17-27. Set 8⅝-in. csg. 2,497 ft.; T. Bknr. 8,948 ft.; T.D. 9,107 ft.; still in Bknr. (cor.); coming out to core.

Ouachita County

Sam Richardson & Co., Inc.'s No. 10 J. Goodwin, 200 ft. N. 330 ft. W, SE cor. NE SW Sec. 32-15-15. Drlg. r. sh. 3,076 ft.

Saline County

A. W. Givens No. 1 Williams, 375 ft. S. 420 ft. E. NW cor. NE NE Sec. 18-3s-15w. Set 6-in. csg. 500 ft.; S.D. 550 ft.
Tedford Drlg. Co. et al's No. 1 Cunningham, C SW NE Sec. 31-3s-15w. R.U.

Sevier County

R. A. McArthur's No. 1 Bell est., 20 ft. SE cor. SE SW Sec. 29-9s-32w. S.D. 785 ft.

Union County

Berg & Laney's No. 1 Cutrer, 150 ft. N. 660 ft. W, SE cor. NW SW Sec. 21-17-14. Cd. 2,727-28 ft.; rec. 7-in. por. sd.; cd. 2,728-35 ft.; rec. 7½ ft. soft por. sd., salty taste; drlg. by fish 350 ft.; T.D. 3,370 ft.; set 5½-in. csg. 2,771 ft.; perf. 2,702-05 ft.; bailed down 1,000 ft. and tstd. S.W.; recmtd. perf. 2,601-03 ft. and reperf. 2,572-74 ft.; T.D. 2,575 ft.; changing to smaller rig.
J. H. Coker and J. P. Grieves et al's No. 1 C. L. Smith, 330 ft. SW cor. NE NW Sec. 32-17-14. T.D. 95 ft.
Fohs Oil Co.'s No. 2 Grace, 660 ft. N, 330 ft. W, SE cor. SW SE Sec. 31-17-14. Set 10¾-in. csg. 801 ft.; W.O.C.
Marine Oil Co.'s No. 1-A W. B. Thompson, 250 ft. S, 400 ft. E, NW cor. SW SE Sec. 3-18-13. Tstd. oil 3,005-25 ft., and mud 3,203-23 ft.; set 7-in. csg. 3,556 ft.; swbd. 50 B.O. and S.S. S.W.; W.O.S.R. 3,590 ft.
Marine Oil Co.'s No. 5-B W. B. Thompson, 250 ft. S, 200 ft. W, NE cor. SE SW Sec. 3-18-13. R.U.
Republic Prod. Co.'s No. 36 fee, N. Hurd Sur. Drlg. sh. 4,526 ft.
Dick Schwab et al's No. 1 Nona Fletcher Lbr. Co., E. Thompson Sur. R.U.

Hille—Wharton County

Texas Co.'s No. 2 Peters, E.T.R.R. Sur., Sec. 101. Loc.

TEXAS

Week Ended May 18

GULF COAST FIELDS

Anchor—Brazoria County

Humble O. & R. Co.'s No. 2 Mettler. Drlg. sh. 9,510 ft.
Sun Oil Co.'s No. 1 Morris Stern, Shubai Marsh Sur. 18⅝-in. csg. 128 ft.; drlg. sd.&sh. 10,369 ft.

Old Ocean—Brazoria County

Harrison & Abercrombie's No. 8 Bernard, C. Breen Sur. Drlg. sh.&L. 3,627 ft.
Harrison & Abercrombie's No. 1 Chenault, C. Breen Sur. Drlg. sh.&L. 10,216 ft.
Harrison & Abercrombie's No. 1 Mueller et al, M. M. Nuckols Sur. Drlg. sh.& L. 6,720 ft.
Harrison & Abercrombie's No. 1 A. F. Wilson, D. McCormick Sur. Drlg. sd.& sh. 10,126 ft.
Stanolind O. & G. Co.'s No. 2 Giles, C. Breen Sur. Drlg. sd.&L. 9,815 ft.
Stanolind O. & G. Co.'s No. 1 Hughes, C. Breen Sur. T.D. 11,014 ft.; 5½-in. csg. 10,011 ft.; tstg.
Stanolind O. & G. Co.'s No. 1 Stevenson-Donovan, Inla Keep Sur. 9⅝-in. csg. 7,039 ft.; drlg. sh.&L. 9,382 ft.
Sun Oil Co.'s No. 4 Borsodi, C. Breen Sur. 13⅜-in. csg. 1,520 ft.; 9⅝-in. csg. 7,009 ft.; drlg. sh.&sd. 10,281 ft.
Sun Oil Co.'s No. 5 McCampbell, C. Breen Sur. Drlg. sh.&L. 9,409 ft.

South Cotton Lake—Chambers County

Humble O. & R. Co.'s No. 1 E. E. Barrow, S. Barrow Sur. Drlg. sh. 4,010 ft.

Willow Slough—Chambers County

Sun Oil Co.'s No. 3 R. J. Barrow, A. Ybarbo Sur. R.U.

Caplen—Galveston County

Sun Oil Co.'s No. 5 Zinn & Forman, S. F. Hughes Sur. Drlg. sh. 2,216 ft.

League City—Galveston County

Phillips Pet. Co.'s No. 1 Parr, Perry & Austin Sur., Lot 9, Drlg. sh. 8,257 ft.
Phillips Pet. Co.'s No. 4 Stewart Title Guaranty Co., S. F. Austin Sur. 10¾-in. csg. 3,520 ft.; 7⅝-in. csg. 9,510 ft.; T.D. 11,270 ft.; well blew out; killed; P.B.; sdtrkd.; drlg. sh. 10,227 ft.

Clear Lake—Harris County

Humble O. & R. Co.'s No. 46 C. West, J. Routh Sur. T.D. 5,914 ft.; W.O.C.
Humble O. & R. Co.'s No. 44-C fee, G. B. McKinstry Sur. Loc.

Friendswood—Harris County

Humble O. & R. Co.'s No. 36 Beamer, T. Choate Sur. Drlg. sh. 5,996 ft.

Fannett—Jefferson County

Gulf Oil Corp.'s No. 4 Bordages, J. Probarth Sur. T.D. 8,238 ft.; perf. csg. 8,220-30 ft.; I.P. 820 B.P.D.; ¼-in. ck.
Gulf Oil Corp.'s No. 5 Bordages, J. Probarth Sur. Drlg. sh. 1,726 ft.

La Belle—Jefferson County

Sun Oil Co.'s No. 1 Foltz, Sur. 376. Drlg. sh.&sd. 6,030 ft.

South China—Jefferson County

Titanic Oil Co.'s No. 3-A Broussard, S. Miles Sur. Loc.

Esperson—Liberty County

General Crude Oil Co.'s No. 20 Davis, A. McNeil Sur. 8⅝-in. csg. 7,181 ft.; drlg. sh. 8,688 ft.
General Crude Oil Co.'s No. 12-B Esperson, A. McNeil Sur. Loc.
General Crude Oil Co. and R. A. Welch's No. 1 fee, M. Duncan Sur. Drlg. sh. 7,226 ft.

Martha—Liberty County

Stanolind O. & G. Co.'s No. 1 Garrow, I.&G.N.R.R. Sur. 7. T.D. 9,525 ft.; 5½-in. csg. 9,208 ft.; tstd. S.W. 9,142-50 ft.; reperf. csg. 8,512-20 ft.

Wilson Creek—Matagorda County

Barnsdall Oil Co.'s No. 1 Stoddard, G. B. M. Catton Sur. 9⅝-in. csg. 7,895 ft.; cg. 9,915 ft.

Ace—Polk County

Shell Oil Co., Inc.'s No. 2 Kirby West Lbr. Co., P. A. Sublett Sur. Drlg. sdy. sh. 5,907 ft.

Segno—Polk County

Gordon Oil Co.'s No. 9-A Wing, I.&G.N. Sur. 15. T.D. 8,120 ft.; comp.; no ga.
Gordon Oil Co.'s No. 10-A Wing, I.&G. N. Sur. 15. Drlg. sh. 1,820 ft.
Gulf Oil Corp.'s No. 4 Quinn, A. Morales Sur. R.U.
Gulf Oil Corp.'s No. 33 Wing, I.&G.N. Sur. 15. Drlg. sh.&L. 7,912 ft.
Gulf Oil Corp.'s No. 34 Wing, I.&G.N. Sur. 13. Drlg. sh.&L. 8,096 ft.
Humble O. & R. Co.'s No. 22 Kirby Lbr. Co., M. Victor Sur. T.D. 8,150 ft.; P.B. sdtrkd.; T.D. 8,150 ft.; tstg.

Joe's Lake—Tyler County

Republic Prod. Co.'s No. 4 Sterne, A. Sterne Sur. S.D. 5,000 ft.

GULF COAST WILDCATS

Brazoria County

Glenn McCarthy's No. 1 E. W. K. Andrau, H.T.&B. Sur. 5. 10¾-in. csg. 3,512 ft.; T.D. 11,468 ft.; sdtrkd.; T.D. 11,410-13 ft.; perf. lnr. 11,406-09 ft.; I.P. 169 bbl. dist. and 129 bbl. S.W. P.D.; ¼-in. ck.
Glenn McCarthy's No. 2 Houston Farm Dev. Co., J. Perry & E. Austin Sur. 7. 10¾-in. csg. 3,492 ft.; T.D. 11,760 ft.; 5½-in. lnr. cs. 11,170 ft.; perf. csg. 10,128-31 ft. and 10,124-28 ft.; flwd. S.W.
Glenn McCarthy's No. 1 W. B. Munson, Samuel Carter Sur. Drlg. sh. 10,506 ft.
Rowan & Nichols Oil Co.'s No. 1 Hubbard, Wm. Harris Sur. Drlg. sh. 9,420 ft.

Chambers County

Humble O. & R. Co.'s No. 1 State, Sec. 247, Galveston Bay. Drlg. sh. 3,167 ft.
Humble O. & R. Co.'s No. 1 State, Sec. 288, Galveston Bay. Loc.
Sun Oil Co.'s No. 1 Clara C. Smith, T.& N.O. Sur. 82. T.D. 8,549 ft.; sdtrkd.; T.D. 8,320 ft.; D.S.S.; P.B.; sdtrkd.; drlg. sh. 8,320 ft.
Standard Oil Co. of Texas' No. 61-54 State, T.D. 9,538 ft.; 7-in. csg. 9,129 ft.; perf. csg. 9,003-12 ft.; flwd. S.W.; made sqz. job; W.O.C.

Colorado County

Cockburn Oil Corp. No. 1 R. W. Ferrs, H. Chrisman Sur. Loc.
Shell Oil Co., Inc.'s No. 1 R. H. Goodrich, H. Heller Sur. Loc.
Shell Oil Co., inc.'s No. 1 Plow Realty Co., Obediah K. Winn Sur. Drlg. sh. 8,000 ft.; no report; "tight" well.

Fort Bend County

H. C. Cockburn's No. 1 G. W. Burkett, Bundleck Sur. Loc.
W. L. Goldston's No. 1 Kulcak, Carl Radke Sur., Sec. 48. Drlg. sh. 1,607 ft.
Tide Water Asso. Oil Co.'s No. 1 Geo. Armstrong, Jas. Scott Sur. T.D. 8,593 ft.; abd.

Galveston County

Stanolind O. & G. Co.'s No. 1 J. A. Hulen, A. Brigham Sur. 13⅜-in. csg. 2,470 ft.; drlg. sh. 8,797 ft.

Grimes County

Jordan Drlg. Co. et al's No. 1 Dodd, C. Campbell Sur. Drlg. sh. 2,420 ft.

Harris County

Christian-Carpenter Drlg. Co.'s No. 1 Anderson, J. C. Anderson Sur. M.I.M.
Gulf Oil Corp.'s No. 1 H. H. Roberts, A. Roberts Sur. T.D. 7,583 ft., S.D.
Hamill & Smith et al's No. 1 C. B. Carter, D. Putnam Sur. Drlg. sh. 4,732 ft.
Wm. Hobson's No. 1 N. N. Allen, Blk. 12, Geo. Green Sur. R.U.
Joyce Richardson et al's No. 1 A. and H. Marks, J. Beard Sur. Rec. S.W.; D. S.T. 6,740-70 ft.; T.D. 7,525 ft.; abd.
Joyce Richardson's No. 1 Marks, J. C. Ogburn Sur. Drlg. sh. 3,216 ft.
Martin Thompson's No. 1 Highlands Farm Corp., J. White Sur. T.D. 6,521 ft.; abd.

Jackson County

Barnsdall Oil Co.'s No. 1 Lozarus, S. F. Austin Sur. Drlg. sh.&L. 4,694 ft.
J. F. Hutchins et al's No. 1 Wearden, J. Williams Sur. T.D. 6,147 ft.; abd.
Wellington Oil Co. et al's No. 1 Ward est, I.&G.N.R.R. Sur. Rec. 1,400 ft. oil; D.S.T. 5,933-38 ft., T.D.; 5½-in. csg. 5,938 ft.

Jasper County

Houston Oil Co. et al's No. 1 Medrano fee, Jose Medrano Sur. R.U.

Jefferson County

Merrimac Oil Corp.'s No. 1 State, Tr. 72, 50 ft. due E of Harwell's abd. hole. W.O.; R.U.

Liberty County

Hebert & Smith's No. 1 W. E. Boyt, H. &T.C.R.R. Sur. T.D. 8,834 ft.; cleaned hole to 8,096 ft.; sdtrkd. 7,824 ft.; 7-in. csg. 8,700 ft.; T.D. 8,865 ft.; perf. csg. 8,535-75 ft.; made sqz. job; cutting and pulling screen and lnr.

Matagorda County

Deep Rock Oil Corp.'s No. 1 Tom Petrucha, F. W. Dempsey Sur. Drlg. sh. 10,592 ft.
Marr McLean's No. 3 Gulf-Tex Oil Co., Ira Ingram Lge. R.U.
Stanolind O. & G. Co.'s No. 1 General American Life Ins., J. C. Peyton Sur. 9⅝-in. csg. 8,001 ft.; T.D. 10,035 ft.; run elec. surv.
Texas Co.'s No. 1 A. B. Pierce, H.&G. N. Sur., Sec. 1, Blk. 65. Drlg. sh. 5,160 ft.
Texas Gulf Prod. Co.'s No. 1 Gulf Tex Oil Co., Ira Ingram Sur. Drk.
Texas Co.'s No. 1 Taylor, Freeman George Sur. T.D. 9,932 ft.; abd.
Van M. Vincent's No. 1 J. F. McNabb Est., E. R. Wightman Lge. Loc.

Montgomery County

H. C. Cockburn et al's No. 1 Bender, Montgomery Co. Sch. Ld. and De Crow Sur. Loc.
Continental Oil Co.'s No. 1 Bender est., Montgomery Co. Sch. Ld. Sur. 13⅜-in. csg. 1,243 ft.; T.D. 11,193 ft.; fsg.
David B. MacDaniel's No. 1 Hattie C. Baldwin, Walker Co. Sch. Ld. Sur. 10¾-in. csg. 1,230 ft.; T.D. 9,741 ft.; 5½-in. csg. on bttm.; perf. csg. est. 9,300-9,400 ft.; reperf. csg. 9,392-9,425 ft.; swbg.

San Jacinto County

Harrison & Abercrombie's No. 1 W. S. Dixon, Solomon Cole Sur. Drlg. sh. &L. 7,212 ft.
Shell Oil Co., Inc.'s No. 1 Coldine, J. Rankin Sur. S.D. 7,635 ft.; W.O.

Tyler County

J. C. Bonham's No. 1 Southwestern Lbr. Co., F. Smyth Sur. T.D. 1,340 ft.; P.B. 1,126 ft.; 4-in. csg. 1,107 ft.; flwd. P. L.O. for 3 hrs.; sanded up.

Walker County

E. J. Dupree's No. 1 Texas Long Leaf Lbr. Co., M. Milsap Sur. T.D. 3,113 ft.

Washington County

J. A. Deering's No. 1 C. W. Bohne, S. Gates Sur. S.D. 6,545 ft.
Mount Selman Oil Co.'s No. 1 Fritz Fuelberg, W. Lightfoot Sur. S.D. 5,962 ft.

Wharton County

Sam Harrison's No. 1 Carlson, Morris & Cummins Sur., Sec. 3. O.W.D.D.; T.D. 6,510 ft., perf. csg. 5,806-09 ft.; flwg. oil and S.W.
D. F. M. Neal's No. 1 fee, Elisha Flack, 4,840 ft.
Titanic Oil Co.'s No. 1 Kountze, Morris & Cummings Sur., Sec. 3. R.U.

S. W. TEXAS WILDCATS

Aransas County

Continental Oil Co.'s No. 2 St. Charles Co., R. D. Blassman Sur.; (relief well to blow out). Drlg. sh. 7,639 ft.

Bastrop County

August Bering's No. 1 Rivers, B. Osborne Sur. T.D. 1,185 ft.
C. R. Franklin's No. 1 Oscar McDonald, Martha Baker Sur. T.D. 2,232 ft.; fsg.
W. C. McGlothlin et al's No. 1 Bill, Albert Black Sur. Drlg. Taylor 2,270 ft.
Ogden & Riddle's No. 6 Riddle, J. B. Blalock Sur. T.D. 2,244 ft., clk.; 5½-in. csg. 2,005 ft.; tstg.

Bee County

Mills Bennett Prod. Co. and Anderson-Prichard Oil Co.'s No. 2 Robinson, J. M. Uranga Sur. (Wlx. test, West Tuleta field). 13⅜-in. csg. 2,537 ft.; 9⅝-in. csg. 7,804 ft.; T.D. 9,210 ft.; perf. csg. 7,545-50 ft.; tstd. 6½ bbl. dist. per hr.; ¼-in. ck. on tbg.; T.P. 2,600 lb.; C.P. 2,250 lb.; S.I.; W.O.
Sultex Oil Co.'s No. 1 Wood, Jas. McGeehan Sur. T.D. 6,162 ft.; 7-in. csg. on bttm.

Bell County

J. J. Cormas' No. 1 Jeff Ellis, Elizabeth Berry Sur. S.D. 493 ft.

Bexar County

C. G. Bigby's No. 1 Mauermann, Fernando Rodriguez Sur. Drlg. sh. 280 ft.
Joe Noake's No. 1 San Antonio Sub. Irrg. Farm, W. Miller Sur. 180. T.D. 780 ft.
Jos. Turner et al's No. 1 John Brown, T. H. Hobbs Sur. 357. R.U.

Burleson County

H. Y. Barnett's No. 1 Fick, J. S. Cox Sur. Drlg. sh. 70 ft.

Caldwell County

J. E. Dickson's No. 1 Jeff Connolly, J. D. Rains Sur. Drlg. 2,329 ft.
Kean & Williamson's No. 1 E. E. Rector, J. Roberts Sur. T.D. 1,781 ft.; S.D.

Calhoun County

Coronado Corp.'s No. 1 K. Welder, Hidalgo Sur., 3 mi. SE Seadrift. "light well"; reported to be tstg.; 5½-in. csg. 9,750 ft.; perf. csg. 9,500-9,600-9,700 ft.; rec. S.W.; made sqze. job at 8,580 ft.; S.D.
Eura B. Oil Co.'s No. 1 T. P. Traylor, Sec. 3, I.&G.N. Sur. Drlg. sh. 3,686 ft.

Cameron County

Sal Vieja Oil Co. et al's No. 1 Garcia, Santa Isabel gr. 8⅝-in. csg. 8,322 ft.; drlg. sh. 9,320 ft.

Duval County

Bridwell Oil Co.'s No. 1-A Rogers, J. Poltevent Sur., Sec. 21. R.U.
W. L. Catlin et al's No. 1 Louis Escapule, J. Poltevent Sur. 73. R.U.
Government Wells Oil Corp.'s No. 1 Lundell, J. Poltevent Sur., Sec. 364. T.D. 1,359½ ft.; 5½-in. csg. 1,347 ft.; I.P.; gas well.
Mayfair Oil Corp.'s No. 2 Yates, J. Poltevent Sur. 323, Spd.
Sun Oil Co.'s No. 1 Garcia, A.B.&M. Sur., Sec. 407. T.D. 5,087 ft.; 5½-in. csg. 4,959 ft.; rec. S.W.; 4,900-10 ft.; prep. to reperf. csg.

Gillespie County

E. L. Nixon's No. 1 Mayford, Pedro Cabrera Sur. 29. Drlg. sh. 675 ft.

Gonzales County

M. T. Huebner's No. 1 M. P. Smith, R. Plummer Sur. T.D. 1,135 ft.

Guadalupe County

Wellington Oil Co.'s No. 1 Mouermann, Jose de la Bauma Sur. Spd.

Hidalgo County

Gulf State Oil Co.'s No. 2 Cardinas, San Salvador del Tule gr. 16-in. csg. 157 ft. T.D. 8,700 ft.; perf. csg. 8,190-8,220 ft.; flwg. dist. and S.W.

Jim Hogg County

French Oil Corp.'s No. 3 Pena, G. W. Rose Sur. 574. Loc.

Humble O. & R. Co.'s No. 3 Mestena O. & G. Co., San Antonio de Baluarte gr., Sec. 392, R.U.

Jim Wells County

J. W. Calvert's No. 1 Spoetzle, Wm. Hobbs Sur. T.D. 4,814 ft.; flwd. P.L. O.; D.S.T. 4,811-14 ft.; comp.; no ga.

Henshaw Bros.' No. 1 Blasehke, Casa Blanca gr. T.D. 5,603 ft. 5¼-in. csg. 5,175 ft.; perf. csg. 5,100-03 ft.; flwg. 25 B.F.P.D.; 7/64-in. ck.; 15% S.W.; tstg.

H. H. Howell's No. 1 San Antonio Joint Stock Ld. Bnk., Lopez gr., Sec. 9, Blk. 14, M.I.M.

H. H. Howell and W. C. McBride, Inc.'s No. 1 E. Schreade, Casa Blanca gr., 2 mi. NE of Orange Grove. T.D. 5,094 ft.; 5½-in. csg. on bttm.

H. H. Howell and Tesemelis' No. 1 D. C Daniels, M. Berrera gr. Loc.

Mid-Continent Pet. Corp.'s No. 1 Schonvogel, Casa Blanca gr. Drlg. sh. 2,536 ft.

Karnes County

Luling O. & G. Co.'s No. 1 Nilson, C Martinez Sur. T.D. 2,988 ft.; abd.

Kendall County

C. M. Dewey's No. 2 Seidensticker, R Davis Sur. 20. S.D. 950 ft.

Kimble County

Austin Bridge Co.'s No. 1 Wilkinson Brooks & Burleson Sur. Drlg. 684 ft.

J. C. Renfro's No. 1 D. C. Morales, Hrs. of H. Grote Sur. 423. Drlg. 818 ft.

Schwab-Carlyle & Auld's No. 1 Baker. F. C. Stisser Sur. T.D. 1,490 ft.; fsg.

Kleberg County

Skelly Oil Co.'s No. 1 State, Laguna de Los Olmos gr., Tr. 385. Rec. 294 ft. oil, 9½-min. D.S.T. 7,455-60 ft.; drlg. 8,384 ft.

La Salle County

Robt. Cooper's No. 1 Yaeger, A.B.&M. Sur. 53. Drlg. 716 ft.

H. R. Cullen's No. 1 A. L. Washburn, L. W. Earnest Sur. 88. Drlg. sh. 4,756 ft.

Lee County

Fred Pederson et al's No. 1 Brown, David Hudson Sur. T. Glen Rose L. 6,600 ft.; T.D. 8,202 ft.

Live Oak County

W. R. Davis, Inc.'s No. 1 Nichols, Simeon Ryan Sur. 66. 7-in. csg. 80 ft.; T.D. 1,503 ft.; abd.

E. M. Jones' No. 1 West, Lot 400, Blk. of West subd. T.D. 10,839 ft.; 6-in. csg. 9,596 ft.; perf. csg. 7,095-7,100 ft. and 7,195-7,200 ft.; rec. S.W.; abd.

Messer & Cage's No. 1 Kluver, S. E. Gilmore Sur. 406. 10-in. csg. 35 ft.; drlg. sh, 2,350 ft.

Sinclair Prairie Oil Co.'s No. 1 Hamilton, Hooper & Wade Sur. 119. 10¾-in. csg. 510 ft.

Smith & Storey's No. 1 Lyne, A.C.H.& B. Sur. 163. T.D. 2,671 ft.

L. W. Stieren's No. 3 Lange, Thos. Adams Sur. T.D. 1,497 ft.

McMullen County

W. F. Ashby's No. 1 Enlaw, D. M. Stapp Sur. 27. T.D. 843 ft.

Tybro Royalty Co.'s No. 3 Martin, H. L. Williams Sur. 18. T.D. 727 ft.; abd.

Tybro Royalty Co.'s No. 4 Martin, H. L. Williams Sur. Loc.

Medina County

W. D. Bacon's No. 1 Wurzbach, Juan Delgado Sur. 37½. Drlg. L. 225 ft.

G. R. and L. J. Dorsey's No. 1 Robertson, John George Sur. Drlg. 428 ft.

Great Southern Exp. Co.'s No. 1 A Muennick Sur. 5. S.D. 410 ft.

Nueces County

Continental Oil Co.'s No. 1 Davis, O.W. D.D.; T.D. 8,032 ft.; abd.

Humble O. & R. Co.'s No. 1-D State, Laguna Madre Bay, Flour Bluff field. T.D. 6,955 ft.; 7-in. csg. on bttm.

John Manley et al's No. 1 Ruegg, Geo. H. Pauls subd. of Driscoll ranch. Loc

Pure Oil Co.'s No. 1 S. Little, S. Ward Sur. 194. 13⅜-in. csg. 179 ft.; drlg. sh. 2,517 ft.

Southern Minerals Corp.'s No. 1 Community, Paso Ancho de Abajo gr. Drlg. sh. 4,412 ft.

Southern Minerals Corp.'s No. 1 D. C. Hellmann, E. R. Oliver, Jr., Sur., Sec. 148. 10¾-in. csg. 746 ft.; drlg. sh. 5,525 ft.

Stanolind O. & G. Co.'s No. 1 State, C. M. Blucher Sur., Tr. 746, 1½ mi. S of E. White Point field. Loc.

Yoakum & Gorman's No. 1 P. C. Nicks, Sh. 9, Casa Blanca gr. T.D. 6,040 ft.; abd.

Refugio County

C. L. Norsworthy's No. 1 T. C. Holeman, M. Reiley Sur. Drlg. sh. 4,120 ft.

San Patricio County

L. L. Smith's No. 1 Timon, Town Tr. of San Patricio de Hibernia. S.D. 6,049 ft.

Starr County

Geo. Boyle et al's No. 1 Carruth, Santiago Lopez Porc. 92. R.U.

Glen Harroun's No. 1 Green & Manning, Juan J. Garza Falcon Porc. 81. T.D. 2,054 ft.; P.B. 1,970 ft.

Lynes & Robertson's No. 1 Villareal, C C.S.D.&G.N.R.R. Sur. 241. Loc.

Magnolia Pet. Co.'s No. 3 Guerra, Santa Cruz gr. (La Reforma field). Loc.

Sun Oil Co.'s No. 1 Claude King, C.C.S. D.&R.G.N.G.R.R. Sur. 511. Loc.

Sun Oil Co.'s No. 1 W. G. Lehr, C.C.S.D. R.G.N.G.R.R. Sur. T.D. 5,542 ft.; fsg.

Sun Oil Co.'s No. 1 Rodriguez, Santa Teresa gr. T.D. 7,502 ft.; perf. csg. 6,420-27 ft.; flwg. dist. and wtr.

Syndicate Oil Corp.'s No. 1 Sanchez, Santos Sanchez Sur. 344. T.D. 1,004 ft.

Travis County

J. H. Sprouls and A. G. Hinn's No. 1 A D. Balm, Santiago de Valle gr. Drlg. 1,190 ft.

Ralph R. Tanner's No. 1 Felix Cherico, Santiago del Valle Sur. Drlg. serp. 475 ft.

Val Verde County

Joiner Oil Co. et al's No. 1 Clyde Sellers T.D. 1,848 ft.; S.D.

Victoria County

British American Oil Co.'s No. 1 J. J. Warden, E. McDonough Sur. 10¾-in. csg. 505 ft.; drlg. sh. 2,936 ft.

Colton & Colton's No. 1-D Edwin Fimbel, T.&N.O. Sur. 3. R.U.

Colton & Colton's No. 1 Terrell, J. B Sideck Sur. Drlg. sh. 5,000 ft.

Maryland Oil Co.'s No. 1 A. Kolle, C. Sambrano Sur. Spd.

S. J. Ryan's No. 1 Bankers Mortgage Co., A. Esparza Sur., Lot 1, Blk. 2. 10¾-in. csg. 601 ft.; drlg. sh. 4,900 ft.

Geo. Smith's No. 1 Reiman, M. Zepeda Sur. Drk.

Texas Gulf Prod. Co.'s No. 1 Kester, C. M. Creanor Sur. T.D. 6,881 ft.; perf. csg. 5,883-85 ft.; flwg. 1⅛ B.F.P.H.; 7/64-in. ck.; 10% S.W.; tstg.

Webb County

H. E. Hall's No. 1 Slator, Mission Oil Co., J. V. Borrego gr. T.D. 100 ft.

Locke Purnell's No. 2 Kirkpatrick, C.S. D.&R.G.N.G.R.R. Sur. 57. Drlg. sh. 1,060 ft.

M. L. Massingill's No. 2 Kirkpatrick, C. C.S.D.&R.G.N.G. Sur. 59. Loc.

Sinclair Prairie Oil Co.'s No. 1 Callaghan Ld. & Cattle Co., B.S.&F. Sur. 585 13⅜-in. csg. 1,598 ft.; T.D. 9,501 ft.; S.D.

Tide Water Asso. Oil Co.'s No. 8 Bruni, M. Arispe gr.; (deep test, Bruni field). Loc.

Williamson County

Jas. Criswell's No. 1 R. Z. Baker, Theophilis W. Metcalf Sur. Drlg. 212 ft.

C. C. Lanier's No. 1 Guental, Harry Cooke Sur. R.U.

C. D. Lane's No. 1 Krieg, H.T.&B. Sur. 3. Drlg. L. 1,410 ft.

Richardson & Lefors' No. 1 Kutzschbach, P. J. Mahan Sur. 115. Drlg. clk. 665 ft.

Wilson County

W. D. Moore et al's No. 1 Lorenz, Morris May Sur. S.D. 75 ft.

Zapata County

Jack Giblin et al's No. 1 Haynes, Villa gr. Loc.

Hawkeye Pet. Co.'s No. 1 Uribe, J. V. Borrego Sur. R.U.

O. W. Killam's No. 4 Hinnant, Martha Hall Sur. 613. R.U.

J. P. Martin et al's No. 1 Serapio Vela. El Grullo gr. T.D. 3,500 ft.; P.B. 2,843 ft.; perf. csg. 2,375-2,400 ft.; swbd fresh wtr.; abd.

Zavala County

H. F. Wilcox O. & G. Co.'s No. 6 Gilliam, Pedro Mesa Sur. 12. T.D. 3,921 ft.; run csg.

W. H. Holland et al's No. 1 Cuellar, J. M. Cuellar Sur. 248. Loc.

WEST TEXAS WILDCATS

Andrews County

Helmerich & Payne, Inc.'s No. 1 University, Sec. 11, Blk. 11, University Sur. 5,500-ft. test. Bailing slight show oil at 4,275 ft.

Concho County

Floyd Dodson's No. 1 Wilson, Thomas Green Sur. 1; 3,500-ft. test. S.D.; csg. 3,398 ft.

Crane County

Gulf Oil Corp.'s No. 5 M. B. McKnight Sec. 1, Blk. 21-B, P.S.L. Sur. W.O.C. 6,404 ft.

Gulf Oil Corp.'s No. 1-F University, SE SE Sec. 22, Blk. 31, Univ. Sur. C.&P.

Gulf Oil Corp.'s No. 12 Waddell, Sec. 30, Blk. 26-B, P.S.L. Sur. 12-in. 532 ft. S.O. 3,215-20 ft.; S.S.G. 3,635 ft.; 8-in. csg. cmtd. 3,713 ft.; S.O. wtr. 3,763 ft. tstg. 3,780 ft., mostly wtr; tstg. wtr. shutoff 3,875 ft.

Gulf Oil Corp.'s No. 31 Waddell, Sec. 5, Blk. 24-B, P.S.L. Sur. Drlg. 2,600 ft.

Crockett County

Finance Oil Co.'s No. 1 Hoover, NW cor. SE Sec. 10, Blk. 1, G.C.&S.F. Sur. Loc.

Lewis & Shannon's No. 1 Noelke, SW cor. NE Sec. 30, Blk. GG, H.E.W.T. Sur. Drlg. 400 ft.

M. & M. Drlg. Co.'s No. 1 G. Bouscaren, SE cor. NW Sec. 29, Blk. G.G., H.E.& W.T. Sur., 1 mi. N of Soma discovery well; prep. D.D. below 500 ft.

Mauldin & Solmon's No. 1 Noelke, SE cor. Sec. 56, Blk. G.G., H.E.&W.T. Sur., ¾ mi. NW of Soma discovery well. R.U.M.

Moore Explin. Co.'s No. 1 A. C. Hoover, Sec. 16, Blk. 1, G.C.&S.F. Sur. C.O. cavings at 535 ft.; prep. resume drlg.

Moore Explin. Co.'s No. 1 Noelke, Sec. 10, Blk. G.G. Made 7 B.O.P.D. swbg. from 2,150-2,233 ft.; drlg. deeper below 2,275 ft.

Soma O. & G. Synd.'s No. 1 W. T. Noelke, NW part Sec. 30, Blk. GG, H. E.&W.T. Sur. Hit sat. at 1,035 ft.; 60 B.P.H. with 40,000,000 cu. ft. gas; bldg. storage; est. 50,000,000 cu. ft. gas and 788 B.O.P.D.

Dawson County

Ray Albaugh's No. 2 Robinson, NW NW Sec. 54, Blk. M, E.L.R.R. Sur. Drlg. 4,770 ft.

Ector County

Everts Drlg. Co.'s No. 1 J. L. Johnson, Sec. 30, Blk. 43, Twp. 1s, T.&P. Sur. Cg. lime with sulfur odor from 4,328-35 ft.; to run drill-stem test.

M. A. Grisham et al's No. 1 R. B. Cowden, 600 ft. from N and E lines, Sec. 4, Blk. 45, Twp. 1n (deep test), T.&P. R.R. Sur. P.B. 4,490 ft.; T.D. 6,090 ft., made 144 B.O. in 12 hrs.; testg.

Gaines County

Richmond Drlg. Co. et al's No. 1 G. R. Brumley, NE NE Sec. 17, Blk. 12-A, P.S.L. Sur. Drlg. 1,035 ft.

Hockley County

Denver Prod. & Ref. Co. and Helmerich & Payne, Inc.'s No. 1 Whiteface Farms, 660 ft. from S and E lines Labor 22 Lgt. 77, Reeves C.S.L. Sur. Had 72 ft of sat.; drld. plug and found no shows T.D. 4,796 ft.; tstd. sulf. wtr.; D.P. stk. 4,794 ft.

Howard County

M. L. Richards' No. 1 Thelma J. Cole, SE NW Sec. 12, Blk. 26, H.&T.C. Sur. 3,500-ft. test. Loc.

Hudspeth County

Haymon Krupp Oil & Ld. Co.'s No. 1 Briggs, Sec. 24, Blk. 73, Twp. 7, T.& P. Sur. C.O. 6,175 ft.

Mitchell County

B.R.S. Oil Co.'s No. 1 M. A. Berry, 407 ft. from S and E lines of Sec. 83, Blk. 97, H.&T.C. Sur. M.I.M.

J. B. Ewing's No. 1 L. A. Strain, 330 ft. from N and 2,970 ft. from W lines of Sec. 63, Blk. 97, H.&T.C. Sur. Loc.

Ewing & Hanes' No. 1 G. I. Grable, Sec 195, Blk. 3, H.&G.N. Sur.; 1,800-ft test. Drlg. 1,720 ft.

N. V. Hilburn's No. 1 B. W. Jackson, NE cor. NW Sec. 82, Blk. 97, H.&T.C. Sur., in same section as No. 1 Strain. S.D. 50 ft.; prep. D.D.

N. V. Hilburn's No. 1 E. T. Strain, Sec 82, Blk. 97, H.&T.C. Sur. S.D.O. 1,790 ft.; drld. sat. 1,706-32 ft. and 1,736-39 ft.; est. 4 B.O.P.D. naturally; U.R. 7-in. 1,790 ft.

Pecos County

B. McCandless and General Crude Oil Co.'s No. 1 Virginia W. Crockett, Sec. 5, Blk. 110, T.C.R.R. Sur. T. Ellenburger 4,401 ft.; tstg. est. 6,000,000 cu. ft. gas after acd.; rng. tbg.; T.D. 4,479 ft. est. 4,000,000 cu. ft. gas and 365 B.O. P.D.; made 531 B.O. in 5 hrs.; S.I.

Plymouth Oil Co.'s No. 1 Richard Levy, SW cor. Sec. 104, Blk. 8, H.&G.N. Sur. Drlg. 2,720 ft.

H. H. Sides' No. 1 Blackstone-Slaughter, Sec. 29, Blk. 129, T.&St.L. Sur., 1,050 ft. W. 250 ft. S lines of section. Drlg. 865 ft.

Reagan County

R. E. Ringo's No. 1 fee, 1,320 ft. from N and W lines of Sec. 22, Blk. K, 3,500-ft. test. Loc.

Reeves County

Roy Johnson's No. 1 H. L. Perkins, Rng. 12½-in. at 415 ft.

Scurry County

Coffield & Guthrie, Inc.'s No. 1 J. W. Moar, Sec. 334, Blk. 97, H.&G.N. Sur., NW Sec.; 4,500-ft. test. Drlg. 2,680 ft.

Ordovician Oil Co.'s No. 1 O. L. Burney, NW NW Sec. 146, Blk. 97, H.&T.C. Sur. Drlg. 150 ft.

Stonewall County

Shell Oil Co., Inc.'s No. 1 Smith, Sec. 143, Blk. 1, H.&T.C. Sur. Top Mississippian at 6,007 ft., top saturation at 6,015 ft. and drilled to T.D. 6,028 ft. in saturation; flwd. 280 bbl. oil in 24 hrs.; prep. cmt. csg. for test; W. C.

Terrell County

E. M. Thomasson's No. 2 Bates, Sec. 30. Blk. 1, I.&G.N. Sur. W.O.C. 1,470 ft.

Terry County

Denver Prod. & Ref. Co.'s No. 1 Ima Lewis, SE SE Sec. 62, Blk. DD, J. H. Gibson Sur. W.O.R. 165 ft.

Geo. P. Livermore's No. 1 M. E. Jacobson, Sec. 6, Blk. 11-D, C.&M. Sur. T.D. 5,030 ft.; prep. to drill in; T. sat. 4,992 ft.; making 25 B.P.H. after 2,500 gal. acd.; S.I. after acid; made 96 bbl. in 3 hrs.

J. M. Welborn's No. 1 W. E. Bailey, NW NW Sec. 103, Blk. 4-A, C.M.&R.R. Sur., 5,400-ft. test. Loc.

Tom Green County

B. C. Mann's No. 1 Joe Funk, 330 ft. N. 1,650 ft. E lines, Sec. 34, Blk. 5, H.& T.C. Sur. U.R. at 1,370 ft.; prep. P.B.; T.D. 1,562 ft.; P.B. and perf. csg. 1,121-29 ft.; bailed 20 B.O. in 24 hrs.; tstg.

Dan Short's No. 1 J. G. Davidson, 2,161 ft. from SL, 2,493 ft. from NW cor. L. P. Moore Sur. S.S.O.&G. 2,660.65 ft.; drlg. 3,325 ft.

Upton County

B. C. & D. Dev. Co.'s No. 1 Richard Owens, NE NW Sec. 91, Blk. Y, G.C. &S.F. Sur. S.P. and S.D. to R.U.R.

Ward County

Atlantic Ref. Co.'s No. 1 Wickett-University, Sec. 12, Blk. 16, University Lds. Sur., 1,980 ft. N and E lines of section. Prep. D.D. 2,733 ft.; S.S.O. 2,570-2,677 ft.; est. 380,000 cu. ft. gas; flwd. 30 to 40 bbl. oil hourly 2,892 to 2,907 ft.; flwd. 445 B.O. and 1,437 B.W. in 24 hrs.; prep P.B. and retest.

Gulf Oil Corp.'s No. 5 Wristen, Sec. 13, Blk. 5, H.&T.C. Sur.; scheduled Ordovician test. Drlg. 7,117 ft.

Kenneth Slack's No. 1 Bird Hayes, Sec. 148, Blk. 34, H.&T.C. Sur. T. Delaware 5,003 ft.; S.D. 5,010 ft.; T. Dela. sd. and hit est. 15,000,000 cu. ft. gas at 5,050 ft. and gas ignited; making 10,000,000 cu. ft. gas daily; under control; fire put out; prep. D.D. below 5,055 ft.

Winkler County

Gulf Oil Corp.'s No. 130 O'Brien, SE SW Sec. 11, Blk. F, G.M.M.B.&A. Sur. Drk.

E. C. TEXAS WILDCATS

Anderson County

Phillips Drlg. Co.'s No. 1 Susie Hanks, W. C. Collingsworth Sur., 13 mi. W of Franks. Loc.

R. H. Williamson's No. 1 O. G. Rogers, Wm. Greenwood Sur., 6 mi. SW of Elkhart. Had gas blowout 4,380-90 ft.; under control; est. 30,000,000 cu. ft. gas; flwg. through separator 5,407 ft. making 125 bbl. dist. dly.; made 467 bbl. dist. in 7 days; tstg.; making about 100 B.F.P.D., 70% S.W. and 30% oil.

Angelina County

Arkansas Fuel Oil Co.'s No. 1 Carter-Kelly, T.&N.O. Sur. 4. Drk.

K. L. McHenry's No. 1 Redditt-Fairchilds. 2,700 ft. S and 1,200 ft. E lines of T.&N.O. Sur., 10 mi. SE of Copestown. Drlg. 1,913 ft.

Summerall-Harris' No. 2 G. E. Condra, D. W. Maroney Sur., ½ mi. W of Huntington. Loc.

Camp County

W. C. McGlothlin's No. 1 Venters, S. Wright Sur., 3 mi. SE Leesburg. R.U. to D.D. to Pett. zone; prep. set csg. to test show in Pett. L. 7,943-90 ft.; had 47 ft. of sat. and por.; S.D. for title trouble at 8,087 ft.; well has not been opened.

Cherokee County

C. C. Lanier's No. 1 W. O. Reagan, W. T. Smith Sur., 2½ mi. E of Mixon. Drk.

R. D. Salisbury's No. 1 W. M. Shankle, J. A. Manchaca Sur., 1½ mi. NE Chilton. P.B. 1,103 ft.; S.D.; W.O.

Falls County

M. Hays' No. 1 A. N. Taylor, F. Mahan Sur., 1 mi. NE of Lott. Topped Buda 1,175 ft.; bailing mud and S.S.O.

Fannin County

C. Newburn's No. 1 A. G. Allen, M. Caldwell Sur., 7 mi. NE of Banham. R.U. and S.D.

Mrs. A. B. Powell's No. 1 Maude Barker, T. Harrison Sur., 9 mi. N of Bonham, SE cor. 42-ac. tr. S.D. 65 ft.

Freestone County

C. F. W. Young's No. 1 Ray Simmons, M. DeCantona Sur., 1½ mi. W of Simmsboro. Drlg. 3,425 ft.

Gregg County

Roger Lacy's No. 1 Lacy, S. P. Ford Sur., 3 mi. SW of Longview; deep Trinity gas test. W.O.C. 7,308 ft.

Houston County

G. L. Dixon's No. 1 B. R. Crowson, J. Chealrs Sur., 5 mi. NW of Lovelady. Loc.

Elmer Hay, Tr.'s No. 1 Starr Pope, J. Forbes Sur., 2 mi. S of Lovelady, NW cor. 162-ac. tr. S.D. 300 ft.

Kaufman County

W. H. McGee's No. 1 Rutland Savings Bnk., John Baker Sur., 2¼ mi. NE of Tulosa. W.O.C. 3,114 ft.

T. G. Shaw, Tr.'s No. 1 Angus Wynne, R. S. Newman Sur., 8 mi. E. Kaufman, lower Trinity test. Drlg. 5,800 ft.

Leon County

Alexander & Wilhite's No. 1 C. H. Mills, M. Copeland Sur., 2½ mi. E of Normangee. S.D. 10 ft.

Nacogdoches County

Melrose Oil Co.'s No. 1 C. N. Wilson, J. Hall Sur., 10 mi. SE of Nacogdoches. Swbg. fresh wtr.; S.S.O. 2,329 ft.

Navarro County

W. H. Warren's No. 1 L. Grey, E. Powers Sur., 9 mi. SE of Kerens. S.D. 660 ft.; T.D.

Robertson County

Rhett Wilder's No. 1 Moise Cerf, J. Erwin Sur., 7 mi. S of Franklin. S.D.O. 1,611 ft.

Rusk County

A. O. Whittington's No. 1 Kangerga Bros., lgn. Castro Sur., 9½ mi. N and slightly E of Pirtle. Drlg. 2,647 ft.; (corrected report).

Smith County

Carmerson Corp.'s No. 1 T. Simpson, R. Walter Sur., 3 mi. NE of Winona, SE cor. of 1,234-ac. tr. Drlg. 4,108 ft.

Van Zandt County

J. B. Daniels' No. 1 W. R. Odom, J. Garcia Sur., 4 mi. NE of Mabank. Cg. 4,037 ft.

Graddy's No. 1 Dr. C. Brandon, W. C. Scott Sur., 5 mi. NE of Edgewood. Bldg. drlg.

E. L. Shackelford's No. 1 E. J. Combs, J. Wright Sur., 3½ mi. NW of Grand Saline. S.D. 54 ft.

EAST TEXAS

(Border Counties)

Cass County

Joe Griffin's No. 1 W. H. Daniel, 715 ft. EL, 360 ft. SL, 101-ac. tr., W. Pittman Sur. Drlg. sh. 1,310 ft.

K. E. Jennings' No. 1 H. T. Wood, Sec. 23-18-2S. Set surf. csg.; W.O.C.

Harrison County

Ark. La. Gas Co.'s No. 1 Isaac, Little Sur. Drlg. 5,585 ft.

Fohs Oil Co.'s No. 1 M. J. Hall, 66-ac. tr. O. H. P. Bodine Sur. R.U.

Marion County—Other

B. I. Daniels' No. 1 T. O. Livingston, G Coore Sur. T.D. 2,330 ft.; W.O. csg.

T. B. Donell's No. 1 E. W. Easterling, 330 ft. S, 1,200 ft. W, NE cor. 200-ac tr., M. G. Nall Sur. T.D. 2,341 ft.; set 5⅛-in. csg. 2,234 ft.; W.O.S.R.

J. M. Horne's No. 1 W. F. Singleton, 1,331 ft. EL, 50 ft. NL, J. O. Jackson Sur. R.U.

H. T. Manning's No. 1 T. O. Livingston, G. Coore Sur. Pits.

J. D. Reynolds' No. 5-B Terry est., W. Coore Sur. Drlg. sh. 2,167 ft.

Sentinel Oil Co.'s No. 1 W. Taylor, 700 ft. N, 325 ft. W, SE cor. B.B.B.&C. R.R. Sur. Set 10-in. csg. 45 ft.; set 5½-in. csg. 2,229 ft.; T.D. 2,241 ft.

Texas Canadian Oil Co.'s No. 1 W. Mackey, L. Needham Sur. Set 5½-in. csg. 2,297 ft.; W.O.S.R.

Marion County—Rodessa

Holcomb & Thomason's No. 1-A Madine, 400 ft. WL, 467 ft. NL, 33.6-ac. tr., A. D. S. Coy Sur. Set 9⅝-in. csg. 1,840 ft.; Hill sd. 5,979 ft.; Gloyd 6,092 ft.; set 6-in. csg. 6,118 ft.; perf. and acd. 6,096-6,112 ft. and tstd. est. 30,000,000 cu. ft. gas; S.D.; W.O.; T.D. 6,118 ft.

Sabine County

Charlotte Oil Co.'s No. 1 Santa Tie & Lbr. Co., 400 ft. SL, 500 ft. EL, 53-ac. tr., L. Grace Sur. Drk.

Shelby County

Earl McDaniels et al's No. 1 J. S. Swann, 470 ft. EL, 1,400 ft. SL, 100-ac. tr., Ann Gray Sur. T.D. 2,378 ft.; 9⅝-in. csg. 585 ft.; W.O.C.

P. & B. Oil Co.'s No. 2 W. C. Windham, A. K. English Sur. Set 10-in. csg. 170 ft.; drlg. 2,642 ft.

W. C. Parker's No. 1 F. G. Willey, 480 varas NL, 240 varas EL, 94-ac. tr., A. K. English Sur. R.U.

WEST CENTRAL TEXAS DISTRICT

Brown County

J. J. Poteet's No. 1 R. L. Williams, NE NE, J. F. Roberts Sur. 470. Drlg. 740 ft.

A. M. Stalcup's No. 1 J. C. Morris, 900 ft. S, 700 ft. E lines of Morris tr. in John Goodwin and W. B. Hester Surveys. S.D. csg. 972 ft.

Callahan County

D. Fox and E. L. Dunn's No. 1 A. and G. Berry, NE pt. Sec. 78, B.O.A. Sur., 950-ft. test. S.D.O. 910 ft.

N. D. Gallagher's No. 1 F. Grisson, SE pt. Sec. 2, Blk. 8, S.P. Sur. Drlg. 455 ft.

E. Johnson's No. 3 M. Hughes, SE cor. NE NE Sec. 127, B.B.B.&C. Sur. Drlg. 590 ft.

C. J. Kleiner's No. 1 R. D. Williams, 183 ft. N. 2,631 ft. E of N and E lines Sec. 62, B.O.A. Sur.; 1,200-ft. test. U.R. 1,088 ft.

C. A. Redmond's No. 1 H. T. Moore, SE cor. NE Sec. 9, Blk. 6, S.P. Sur.; 2,000-ft test. P.B. 1,843 ft.; shot 1,334-43 ft.; C.O. after shot.

J. L. Reeves' No. 1 N. A. Estes, SW¼ Sec. 4, Blk. 5, S.P. Sur., 2½ mi. S of Bowles pool. M.I.M.

Coleman County

Anzac Oil Corp.'s No. 1 McCord, 2,200 ft. E. 2,196 ft. S of B.B.B.&C. Sur. Drlg. 1,887 ft.

J. C. Ort's No. 1 Emet Walker, SE cor Hicks Sur. W.O.C. 700 ft.

J. W. Quinn, Tr.'s No. 1 Duty & Stevens, SE cor. Sec. 25 H.T.&B. Sur.; 1,800-ft. test. Drlg. 1,590 ft.

Robertson & Bradford's No. 1 Morris, 330 ft. N, 1,582 ft. W lines. Blk. 2 G.H.&H. Sur. Prep. test; Gardner sd topped at 3,530 ft. with sat.; awaiting official ga.; making about 6,000,000 to 7,000,000 cu. ft. gas daily with no oil; gaged only gas, 5,750,000 cu. ft.; may C.O. and dpn.

Coryell County

Kistler O. & G. Co.'s No. 1 Barnes, 380 ft. SE line, 3,700 ft. NE line of H. Farley Sur., 3 mi. NE of Gatesville; 2,500-ft. test. S.D.O. 852 ft.

Eastland County

Burton-Womach's No. 1 J. T. Collins, NE NW Sec. 11, Blk. 1, H.&T.C. Sur.; Ellenburger lime test. Loc.

Dobbs Oil Corp.'s No. 1 Mrs. R. L. Poe, 1,320 ft. from S and E lines of SE¼ Sec. 37, Blk. 3, H.&T.C. Sur. W.O. csg. 1,000 ft.

Dobbs Oil Corp.'s No. 1 Thomasson, S. H. Key Sur., 330 ft. from N. 846 ft. from E line of 80-ac. tr. Drlg. 2,000-ft.

Steele & Black's No. 1 B. B. Poe, 150 ft. N and E lines, SE¼ Sec. 6, Blk. 2, H.&T.C. Sur.; 900-ft. test. Drlg. 725 ft.

Erath County

Dillingham's No. 1 Morning. S.D.O. 3,450 ft.

T. G. Jackson's No. 1 J. W. Taylor, Prater Sur., Abst. 1029, 4 mi. NE of Desdemona. Est. 15 to 20 B.O.P.D. at 3,360-75 ft.; S.D. 3,395 ft.; not treated. rig burned; S.D.O. 3,395 ft.

E. H. Young's No. 1 J. B. Mills, J. Harry Sur., 5 mi. NW of Dublin; 3,500-ft. test. M.I.M.

Hamilton County

A. J. Caldwell's No. 1 W. W. Jones, 1,002 ft. from NE, 150 ft. from SE lines of W. H. Crowder Sur. Drlg. 2,615 ft.

Wallace & Wallace's No. 2 C. E. Lund, C S½ E 20 ac., N½ SW¼, R. J. Bailey Sur. 51. Csg. 300 ft.; S.D. csg. 3,265 ft.; T. Marble Falls 3,245 ft.; drlg. 3,485 ft.

Jones County

Geo. Callihan's No. 1 J. J. Steele, NE cor. SE Sec. 11, Blk. 15, T.&P. Sur. Loc.

Erin Pet. Co.'s No. 1 J. M. Caton, Sec. 4, Orphan Asylum Lds. Tstg. sat. 3,360-3,404 ft.; P.B. 3,390 ft.; flwd. only sul. wtr.; shot 15 qt.; no results; S.D.O. 3,404 ft.

Fain-McGaha Oil Corp. and Ungren & Frazier's No. 1 W. G. Swenson, J. McGrew Sur. 245; 2,650-ft. test. Drlg. 750 ft.

J. E. Farrell's No. 1 F. B. Reid, NW¼ Sec. 31, D.&D. Sur.; 3,500-ft. test. T.D. 2,429 ft.; comp. for new discovery for 20 to 30 B.P.D. from L. at 2,568-70 ft. making 12 to 15 B.P.D.; made 124 bbl. daily, pmpg.

J. C. Hunter's No. 1 J. Sayles, SE N½ Subd. 8. R. Smith Sur. 192, just NE of Hawley; 3,300-ft. test. Drlg. 615 ft.

Keler's No. 1 Radford, SE¼ Sec. 20, Blk. 4, H.&T.C.R.R. Sur. S.D.O. 1,880 ft.

M. R. Mead's No. 1 E. Hicks, SE cor. Sec. 5, O.A.L. Sur.; 3,500-ft. test. Mch.

Merry Bros. & Perini's No. 1 C. S. Walker, SE cor. Walker tr., G. Martinez Sur. 137. Loc.

J. D. Sandefer, Jr.'s No. 1 Hudspeth, 160-ac. tr. in Subd. 22, Edw. Miles Sur. 219. Loc.

Palo Pinto County

Fred Guyer's No. 1 Dalton, Dalton Sur., Abst. 153; 1,400-ft. test. Loc.

E. P. Wilson's No. 1 F. M. Watson, NW pt. of Sec. 10, Blk. 2, T.&P. Sur.; 3,250-ft. test. S.D.O. 4,065 ft.

Parker County

Brown & Gardner Bros.' No. 1 Gilbert T.&P. Sur., Abst. 1958, Tstg. gas; C.O. 100 ft. off bttm.; rng. 5⅛-in. csg. 3,905 ft.; T.D.

E. R. Marchman's No. 1 G. W. Keeling, F. Lidely Sur., Abst. 829, 1½ mi. W of Springtown; 3,500-ft. test. Recontracted to 2,400 ft.

Runnels County

Davis' No. 1 Summers, W½ of tr. in Day Ld. & Cattle Co. Sur., W of Beddo field. H.F. S.W.; may P.B.; S.D.O. 3,624 ft.

Homer Price's No. 1 Williams, C S½ Sec. 26, D. Diaz Sur., N outpost to Beddo field. M.I.R. 2,561 ft.

Shackelford County

T. L. Blanton's No. 1 W. F. Tucker, SW Sec. 552, T.E.&L. Sur. Loc.

John E. Carson's No. 1 R. A. Elliott, 660 ft. S and E lines, Sec. 48, B.A.L. Sur.; 3,650-ft. test. Rng. csg. 1,003 ft.; H. F.W.

Georgian Oil Corp.'s No. 1 Blach ranch, C NE¼ of T.E.&L. Sur. 390, 10 mi. NE of Albany; Ordovician test. T.D. 4,825 ft.; P.B. to Caddo L. for test at 3,860-3,915 ft.; T. Ellenburger 4,730 ft.; P.B. 3,915 ft.; treated with 1,000 gal.; C.O.

F. N. Palm's No. 1 M. E. Daniels, SW cor. NE Sec. 16, E.T.R.R. Sur., 800-ft. test. Drlg. 115 ft.

August P. Schkade's No. 1 J. L. Godwin, NE Sec. 385, T.E.&L. Sur. Loc.

Swann & Gorsuch's No. 1 Sam Lazarus, SE SE Sec. 80, Blk 13, T.&P. Sur S.D.; S.S.O. 1,514-17 ft.

L. T. Terry's No. 1 W. A. Green, NW cor. S½ NE Sec. 64, Blk. 12, T.&P. Sur. S.D.O. 1,250 ft.

Stephens County

Guy Ewing's No. 1 Crudington, SE cor. T.E.&L. Sur. 1268, 5½ mi. S of Stribling field. W.O.C. at 3,361 ft.; show oil from 3,362-64 ft.; W.O.C. 3,361 ft.; S.S.O. 3,362-64 ft.

Jones Bros. Drlg. Co.'s No. 1 T.X.L., 660 ft. N and E lines SE Sec. 3, Blk. 3, S.P. Sur.; 4,050-ft. test. Drlg. 3,500 ft.

Panhandle Ref. Co.'s No. 1 Frank Magers, SE Sec. 1, Blk. 3, S.P. Sur., 1¾ mi. N of Fagg area. Straightening hole 3,962 ft.

Pitzer & West and Brazos-Young Oil Corp.'s No. 1 H. Compton, SW SW Sec. 9, O.A.L. Sur., 1 mi. SE of Lovingpool; 3,600-ft. test. S.D. 3,536 ft., no test.

J. R. Tolbert's No. 1 W. L. Martin, NW cor. NE¼ Blk. 1335, T.E.&L. Sur., 1½ mi. SW of Fagg area. Drlg. 2,000 ft.

Andrew Urban, Jr.'s No. 1 T. T. Brooks, 150 ft. N and W lines of NE 40 ac. of 106-ac. tr. in Sec. 90, University Lds. Sur. Loc.

Taylor County

Green & Owens' No. 1 J. Bettes, R. Ortiz Sur. 19; 2,500-ft. test. Fsg. 1,390 ft.

Hose's No. 1 Bond, NE NE Sec. 40, Blind Asylum Lds., 2 mi. SW outpost to Bowles field. Drlg. 4,720 ft.

NORTH TEXAS WILDCATS

Archer County

L. T. Burns' No. 1 Mrs. J. Turberville, NW cor. Blk. 154, Robt. Carson Sur., Abst. 80; (Caddo lime test). Drk.

W. H. Gant's No. 1 A. Vogtsberger, Sec. 3, G. E. Co. A-146 Sur.; 5,200-ft. test. O.S. 4,659-71 ft.; L.S.O. 5,257-69 (cd.) ft.; cmtd. 6⅝-in. at 4,651 ft.; drld. plug; tstd. wtr. with S.S.O.

E. F. Scott's No. 1 York, SE cor. SW¼ Sec. 1861, T.E.&L. Sur. Spd. and S.D.

Baylor County

Paul B. Scott et al's No. 1 C. H. Farr, Sec. 228, T.&N.O. Sur.; 3,100 ft. test. Drlg. 2,965 ft.

Hattie B. Madden's No. 1 J. J. James, 2,000-ft. test located 1,650 ft. from N and 150 ft. from E lines of Sec. 150, T.&N.O.R.R. Sur. S.D.O. 1,308 ft.

R. T. Myers' No. 1 W. H. Portwood, Sec. 19, H.&T.C. Sur., Blk. 45. Drlg. 150 ft.

Rogers' No. 1 Howe, J. Howe Sur., Abst. 572. R.U.R.

Clay County

L. T. Burns' No. 1 Tom Watson, Sec. 2631, T.E.T. Sur.; (3½ mi. SE Shell's Henderson discovery). Set 100 ft. 10-in.; W.O.C.

Costley's No. 1 Ed Bevering, Sec. 4, B. B.B.&C. Sur., Abst. 384. M.I.M.

Walter Gant's No. 1 Edwards, S. C. Beldon Sur., Abst. 12, 4 mi. E of Henrietta. W.O.S. to C.O.

Alexander Goldsmith's No. 1 Republic Nat. Gas Co., 312 ft. N, 495 ft. W lines of Blk. 14, Parker Co. Sch. Ld. Sur., 1 mi. S of town of Petrolia; 4,500-ft. test, 6⅝-in. 2,402 ft.; perf. csg. 1,600-10 ft.; C.O.

E. C. Norwood's No. 1 K. N. Hapgood, Sec. 61, M.C.S.L. Sur.; 6,000-ft. test. Drk.

W. B. Omohundro's No. 1 D. J. Percifield, Sec. 37, Belcher subd.; 5,000-ft. test. S.S.O. 5,260-72 ft.; drlg. 5,798 ft.

Shell Oil Co., Inc.'s No. 1 Davis, Sec. 93, J. H. Belcher Sur. O.W.D.D.; L.S.O. 5,687-5,720 ft.; T.D. 6,012 ft.; ran elec. survey and S.D.O.

Carlos Wagner's No. 1 L. C. Thaxton, 3,630 ft. S, 330 E lines of 301-ac. tr., W.C. Donley Sur., Abst. 129, Sec. 4; 5,000-ft. test. Spd. and S.D.

Cooke County

Cranfill & Staley's No. 1 S. H. Peery, SW B.B.B.&C. Sur., Abst. 145. S.D. 2,505 ft.

Tolbert & Rutledge's No. 1 H. W. Stark, 330 ft. from W and 466 ft. from S lines of SE¼ of D. C. Hudson Sur. Loc.

Cottle County

J. E. Burns et al's No. 1 J. E. Moss, Sec. 5, Blk. L, A. Forsythe Sur. Jnkd. 225 ft.; skd. 20 ft. S; S.D. 1,823 ft.

Denton County

Shooks & Finnell's No. 1 Sanders, Nolin Sur. 5⅛-in. 1,995 ft.; drlg. plug; sat. L 2,013-45 ft.; acd. 1,000 gal.; shot 50 qt.; no results; S.D.O.

Foard County

Domain Oil Co.'s No. 1 Wilson, Marshall Univ. Sur. Drlg. 3,800 ft.

Hardeman County

Norris & Gilbert's No. 1 Robert Weekley, SW SE Sec. 87, Blk. 16, H.&T.C. Sur Drlg. 3,250 ft.

Jack County

R. A. Conkling's No. 1 M. Hoofle, A. James Sur., Abst. 318, 3 mi. S Antelope, 3,500-ft. test. Loc.

Noah Daves' No. 1 K. D. Baker, Sec. 2709, T.E.&L. Sur. Fsg. 3,166 ft.

Harper Pet. Co.'s No. 1 F. V. Vanhooser, J. F. Lewis Sur. Loc.

Harper Pet. Co.'s No. 1 J. W. Kinder, SW¼ Sec. 2667, T.E.&L. Sur., Abst. 762. T.D. 2,160 ft.; S.D.

H. R. Smith's No. 1 I. G. Yates, SW cor John Holderman Sur., 6 mi. NW Jacksboro, S.D.O. 2,600 ft.

Steel & Cooper's No. 1 C. S. Stewart, 1,398 ft. from E and 466 ft. from S lines of J. H. Nessmith Sur. Cmtd. 6⅝-in. csg. 2,896 ft.; S.S.O. 2,911 ft. to 2,922 ft.; tstg.

Montague County

British Am. O. P. Co.'s No. 1 J. A. Martin, Sec. 27, H.&T.C. Sur.; 6,000-ft. test. Drlg. 5,495 ft.

Seitz, Comegy & Seitz' No. 1 King, 1,903 ft. W, 330 ft. N lines of SE¼ E. B Wooten Sur., Abst. 480. Ran elec. sur. and S.D.O.

W. H. Gant and Continental's No. 1 J. L. Brown, Sec. 58, E.T.R.R. Sur. 6⅝-in. 6,843 ft.; brkn. sdy. L. S.O. 6,843 ft.; treat. 8,000 gal. acd.; test showed O.& G. 7,036-56 ft.; T.D. 7,333 ft.; rng. 5½-in. lnr. 6,843-7,333 ft.; fsg. swb. and 5,800-ft. line; set retainer 6,500 ft.; perf. 52 shots 6,000-6,400 ft.; shot 10 qt. 6,470-80 ft.; no results; shot 20 qt. 6,300-10 ft.; 1,000 ft. mud, no oil; set plug 6,080 ft.; tstg.; re-treated 6,000 gal. acid; well kicked off and flowed in derrick from lime at 6,070-6,145 ft; shut in for several days then open to flow only few bbl. by heads.

Walter Gant's No. 1 J. W. Robinson, Sec. 55, M.E.P.&P. Sur. Cmtd. 5½-in. csg. at 4,130 ft.; perf. with 30 shots from 4,030-45 ft.; H.F.W.; S.D.O.

Harvey Drlg. Co. et al's No. 1 D. A. Threadgill, Sec. 10, Jack Co. Sch. Ld. Sur. A-390; 6,000-ft. test. Drlg. 4,448 ft.

W. H. Peckham's No. 1 Dr. Lawson, N. Kimbro Sur., Abst. 405. Drk. and M. I.M.

Ramsey Pet. Corp.'s No. 1 W. H. Magee, A. C. Davis Sur., just outside of town of Montague. Cored sat. 6,260-76 ft., made only 300 ft. S.W. on test; T.D. 6,541 ft.; rng. elec. sur.

Sinclair Prairie Oil Co.'s No. 1 David Doty, J. H. Jones Sur., Abst. 396; (W offset to discovery). T. Ellenburger 5,820 ft.; S.O. in granite wash 5,638-62 ft.; set 6⅝-in. at 5,825 ft.; D.S.T. 5,548-83 ft. recov. 915 ft. oil-cut mud; perf. csg. 5,271-72 ft.; hole filled 800 ft. with S.W.; W.O.C.

Sinclair Prairie Oil Co.'s No. 2 A. P. Howard, W. Wallace Sur. Abst 841. Bailed S.W. when plug drld.; perf. csg. 5,473-79 ft.; W.O.C.

Sinclair Prairie's No. 1 T. H. Milam, Lot 54, A. Beason A-20 Sur.; 6,000 ft. test. Drlg. 2,200 ft.

Sinclair Prairie Oil Co.'s No. 1 G. Whaley, SW cor. of N½ of T. R. Jackson Sur., Abst. 394; 6,000-ft. test. Drlg. 1,892 ft.

F. K. Williford's No. 1 W. M. Goldsmith, C of Blk. 13, Wallace Sur., in Bonita townsite. Loc.

Youngblood & Foree's No. 1 M. N. Beasley, 900 ft. NL, 220 ft. EL of Benj. McGaha Sur.; 7 mi. N of Nocona; (3,600-ft. test). Loc.

Tarrant County

W. L. Cox's No. 1 N. H. Poole, 160 ft. from S and W lines of J. McDonald Sur. Loc.

Throckmorton County

Normandie Oil Corp.'s No. 1 Travis, Sec. 37, Travis Co. Sch. Ld. Fishing 3,127 ft.

Wichita County

S. H. Fagadau's No. 1 A. D. Potts, NE cor. Sec. 4, Blk. 7, H.&T.C. Sur. Basal 3,989-4,035 ft.; tstg.

Wilbarger County

Amerada Pet. Corp.'s No. 1 B. Goodpasture, Sec. 35, H.&T.C. Sur., Blk. 15. 8,000-ft. test. Sat. lime 4,407-20 ft.; 600 ft. oil and 150 ft. mud on 60-min. D.S.T.; drlg. 5,906 ft.

O. M. Stidham & Son's No. 1 C. D. Watts, Sec. 64, H.&T.C. Sur., Blk. 15.; 6,000-ft. test. S.P. and S.D.

Young County

Commodore Oil Co.'s No. 1 Clinton Realty Co., Sec. 2384, T.E.&L. Sur. S.D. csg. 892 ft.

H. W. Dyer's No. 1 M. G. Cheney, M. L. Terry Sur., Abst. 1261. S.D. 2,130 ft.; reprs.

K. R. March's No. 1 Ed Burton, NE cor. Blk. 99, J. A. True Sur., Abst. 1640, 4 mi. SE Graham; 4,250-ft. test. 4,500 gal. acid 3,952-4,014 ft.; 1,800 ft. O.I.H.; testing.

A. T. Strong No. 1 Craig heirs, N. Lynch Sur. Drlg. 1,850 ft.

Trentman Oil Co.'s No. 1 J. N. Hall, 1,840 ft. from N and 1,440 ft. from W lines of Sec. 1996, T.E.&L. Sur. Loc.

TEXAS PANHANDLE

Childress County

Texas Co.'s No. 1 P. B. Smith, NW NW Sec. 97, Blk. 9, H.&G.N. Sur. R.U.R.

Hall County

Humble Oil & Ref. Co.'s No. 1 A. D. Weaver, SW NW Sec. 51, Blk. 1, S.P. Sur.; 7,500-ft. test. Loc.

Hutchinson County

Jake Phillips' No. 1 McCloy, Sec. 101, Blk. 5-T, T.&N.O. Sur. Hole filled 2,000 ft. with oil; tstg.

Ochiltree County

James R. Macon et al's No. 1 W. R. Norris, SW SE Sec. 212, Blk. 43, H.&T.C. Sur. T.D. 6,274 ft.; test sec. at 5,000 ft.; est. 6,000,000 cu. ft. gas on D.S.T.; tstg.; bailing 6,274 ft.; csg. cmt. at 5,000 ft.; R.U. control head for testing at est. 6,000,000 cu. ft. gas; plug drilled; tstg. wtr. shutoff.

Potter County

Canadian River Gas Co.'s No. 1 City of Amarillo, in city limits just north of city. Drlg. below 5,000 ft.

Sherman County

I.T.I.O. Co.'s No. 1 S. C. Bryant, C NW¼ Sec. 369, Blk. T-1, T.&N.O. Sur. Drlg. 4,250 ft.

Canadian Fields

By VICTOR LAURISTON

CHATHAM, Ont., May 18.—In Section 13-19-3w5, West Central Turner Valley. Arrow Royalties' No. 1, LSD 16, finished at 8,102 ft. after getting the black lime at 8,096 ft., has been given 489 bbl. a day temporary allowable. A new bottom-hole pressure test is being taken, and quota may be revised when this is completed. Flow of Arrow's No. 1 through 1-in. choke, after acidizing, was 3,577 bbl. a day, a record for the field since this system of testing was instituted. The previous high was Home Oil Co.'s No. 3, with 2,609 bbl.; though on the old 2-in. choke test. Frontier Royalties' No. 1, in Southwest Turner Valley, made 3,719 bbl.

Completion of Arrow's No. 1 opens a new producing area in what was previously regarded as a dry belt, Brown Oil Corp.'s No. 3, a little more than a mile east, having failed to get production from a tight lime. The nearest crude producers, Anglo-Canadian's No. 8 and Royalite's No. 48, are nearly 1½ miles to the south.

In Section 18-19-2w5, east of Section 13, Davies Petroleums' No. 5, LSD 10, has been completed in the lime at 7,391 ft., and treated with acid under 3,000 lb. pressure. Early indications are for a well comparable with Arrow's No. 1. Initial showings in the Arrow well were disappointing, owing to the tight lime, and a failure was regarded as probable till liberal acidizing broke up the formation.

Farther south in the same section, Calmont-Northwest's No. 1, LSD 3, finished at 7,609 ft., 437 ft. in the lime, is acidizing and testing.

In Section 6-19-2w5, East Crest Oil Co.'s No. 5, LSD 9, finished at 7,762 ft., flowed 901 bbl. a day through 1-in. choke, with 1,100 gas-oil ratio and 1,920 lb. bottom-hole pressure. It has been given a new temporary allowable of 313 bbl. Kamalta Oils' No. 1, LSD 1, is deepening in the lime after running casing to 7,920 ft. The upper lime showed 130 ft. of porosity, indicating a good producer.

In Section 7-19-2w5, Royalite Oil Co.'s No. 48, LSD 10, finished at 7,533 ft. after getting the Madison at 7,087 ft., showed 60 bbl. flush hourly after a first light acid treatment, and is waiting for official test after reacidizing.

In Section 32-18-2w5, Southwest Turner Valley, Royal Canadian Oil Co.'s No. 4, LSD 12, is below 7,915 ft. after getting the Madison at 7,645 ft.

In Section 20-18-2w5, York Oils' No. 3, LSD 3, is below 7,856 ft. after getting the lime at 7,586 ft. Drill-stem test of the upper porous zone indicated a good well.

In Section 17-18-2w5, Royalite Oil Co.'s No. 50, LSD 7, finished in the Madison at 7,790 ft. and has run tubing preparatory to acidizing and testing.

Northwest-Hudson's Bay's No. 3, LSD 15, Section 8-18-2w5, finished drilling at 8,120 ft., 435 ft. in the Madison, and is acidizing and testing. Preliminary tests before acidizing showed 15 to 20 bbl. an hour.

Southwest Turner Valley

In Section 8-18-2w5, Southwest Turner Valley, Northwest-Hudson's Bay Co.'s No. 4, LSD 14, is finishing derrick.

Kansas Fields

(Continued from Page 104)

Bloomer field, Ellsworth County, was completed at total depth of 3,222 ft. for top allowable potential of 3,000 bbl. of oil daily.

Stanolind Oil & Gas Co.'s No. 1-B Stoltenberg, NW NW Section 27-16-10w, Stoltenberg pool, made daily allowable potential of 3,000 bbl. of oil and was completed at total depth of 3,285 ft.

Lario Oil & Gas Co.'s No. 1 Mehl, C E½ NE SE Section 35-16-10w, was dry and abandoned at 3,330 ft., total depth.

Barnsdall Oil Co.'s No. 1 Matosh, C N½ SE NE Section 34-16-10w, was a cellar. Roger and others' No. 1 Wilkens, C S½ SE NE Section 13-17-10w, was a rotary rig. Finston and others' No. 1 Siemsen, C W½ NW SE Section 3-17-10w, was a cellar.

McPherson County

Republic Natural Gas Co.'s No. 3 Knackstedt, SE NW Section 30-20-5w, Bornholdt pool, McPherson County, made initial daily potential of 591 bbl. of oil, producing from chat at total depth of 3,346 ft.

Same company's No. 3 Mattson, NE SW Section 19-20-5w, was bottomed in chat at 3,332 ft. and made initial daily potential of 3,000 bbl. of oil, top allowable.

Cities Service Oil Co.'s No. 2 Pearson, SE SE Section 19-20-5w, made daily potential of 270 bbl. of oil, initially, and was completed at total depth of 3,381 ft.

Republic Natural Gas Co.'s No. 1 Johnson, C N½ NW NW Section 19-20-5w, had initial daily yield of 225 bbl. of oil from chat and was completed at 3,348 ft., total depth.

Continental Oil Co. and others' No. 10 Graber, C E½ W½ NW Section 32-21-1w, Graber pool, was completed for initial daily potential of 614 bbl. of oil at total depth of 3,315 ft.

New work in McPherson County: Westgate-Greenland Oil Co.'s No. 3 Henne, C E½ SW SE Section 18-17-1w, rotary rig; Bay Petroleum Corp.'s No. 1 Coons, C W½ SW SW Section 13-19-1w, cellar; Central Petroleum Co. and others' No. 3 Swanson, C W½ NE NW Section 18-20-5w, moving in material; same operators' No. 2-B Swanson, C S½ SW NW Section 18-20-5w, set casing and waiting on cement at 190 ft.; W. H. Moulton's No. 2 Bornholdt, C N½ NW SE Section 30-20-5w, drilling below 546 ft.

Cowley County

Earl Wakefield's No. 3 Wilson, SE NE NW Section 4-32-3e, Weathered pool, Cowley County, was deepened from Mississippi lime to 3,239 ft. in Arbuckle lime and pumped 235 bbl. of oil daily.

Ryan Consolidated Corp.'s No. 1-B Couch, SW NE SE Section 13-20-5, Couch pool, found Bartlesville sand at 2,785 ft., was bottomed at 2,815 ft., and made initial swabbing potential of 246 bbl. of oil daily, completed.

Texas Co.'s No. 4 Ross, NE SE SE Section 21-31-4e, Hittle pool, made daily potential of 442 bbl. of oil and was completed at total depth of 3,418 ft. in Arbuckle lime.

Arthur Brewer's No. 2-C Starkey, SW SE SE Section 16-30-4, was rigging up.

Rice County

Bishop Oil Corp.'s No. 3 Cramm, SW NE SE Section 15-19-9w, Cramm pool, Rice County, was bottomed at 3,206 ft. in Arbuckle lime and completed for daily potential of 2,293 bbl. of oil.

Skelly Oil Co.'s No. 4 McGuire, SE NE Section 34-19-10w, Silica field, was completed at 3,311 ft., total depth in Arbuckle lime, for 1,914 bbl. of oil daily.

Continental Oil Co. and others' No. 11 Wood, SE NW SE Section 12-18-8w, Geneseo field, was bottomed at 3,221 ft. in Arbuckle lime and made daily potential of 1,838 bbl. of oil.

Saco Oil Co.'s No. 1-B Habiger, SE SW SE Section 12-18-10w, Habiger-Bloomer area, was dry and abandoned at 3,286 ft.

Mitchell Drilling Co.'s No. 1 Ginter, C W½ SE SE Section 11-20-8w, Lyons area, was dry and abandoned at 3,312 ft., total depth.

Bradley Brothers and others' No. 1 Mattson, C N½ NE SE Section 25-20-6w, Bornholdt field, was completed for 88 bbl. of oil daily at 3,372 ft., total depth.

Skelly Oil Co.'s No. 2 Purcell, C W½ SE NW Section 33-19-9w, was rigging up rotary. Hall and others' No. 1 Warner, C W½ SW NE Section 16-20-10w, was a rotary rig.

Reno County

Ohio Oil Co.'s No. 3 Vansickle, SE NW Section 23-23-4w, Burrton field, Reno County, was bottomed at 3,526 ft., plugged back, in chat, and made initial pumping potential of 165 bbl. of oil in 24 hours.

Colorado Syndicate's No. 2 Sabin, NW NW NE Section 13-23-4w, was drilling below 588 ft.

Graham County

Continental Oil Co. recently completed its No. 1 Loveridge, C W½ W½ SE Section 10-9s-21w, Morel pool, Graham County, for initial daily potential of 956 bbl. of oil at total depth of 3,710 ft. in Arbuckle lime.

Miscellaneous Reports

Henderson and others' No. 1 Shook, SW SW NE Section 31-23-12, Greenwood County, was dry and abandoned at 1,901 ft. A. Miller's No. 1 Mullinax, NW SW SE Section 12-27-10, Willard pool, produced 128 bbl. of oil daily and was completed at 1,895 ft., total depth. R. E. Youker's No. 1-A Grundy, NE NW SW Section 7-27-11, was dry and abandoned at 1,916 ft.

P. Hart's No. 8 Hanna, NW NE SW Section 11-23-13, Coffey County, was completed for 15 bbl. of oil daily at 1,805 ft., total depth.

Schermerhorn Oil Co. and others' No. 1 Sanders, NE NW SE Section 2-25-2e, Sedgwick County wildcat, was dry and abandoned at total depth of 2,887 ft.

New Operations

United Production Co.'s No. 1 Stewart, NW SE Section 27-29-35w, Grant County, was a rotary rig.

Butler County: Rex & Morris' No. 5 Johnson, NE SE Section 20-26-7, rigging up machine; C. L. Carlock's No. 1 Hadley, NE SE Section 30-26-7, moving in material; J. H. Wagoner's No. 1-A Ramsey, SW NW SE Section 8-24-5, drilling below 1,475 ft.

Charles Barker's No. 1 Butcher, NE SW NE Section 17-28-11, Greenwood County, was rigging up machine.

Stafford County: Transwestern Oil Co.'s No. 2-C Banker, C W½ SE SE Section 10-24-11w, rigging up rotary; Skelly Oil Co. and others' No. 1 Kipp, SW SW NW Section 26-25-14w, drilling below 500 ft.; Stanolind Oil & Gas Co.'s No. 6 Spangenberg, C S½ SE NW Section 29-22-11w, rigging up rotary.

Oklahoma Fields

(Continued from Page 113)

1-5-9w, was dry and abandoned in shale at total depth of 6,015 ft.

Johnson's No. 1 Little Chief, NE NE NE Section 3-5-10w, had dry Noble-Olson sand at 3,445 ft., total depth 4,200 ft., and was abandoned.

New work in Caddo County: Rollins and others' No. 2 Hedlund, NW SE NE Section 11-5-9w, set 10-in. casing at 100 ft., waiting on cement; Ohio Oil Co.'s No. 8 Wagner, NE SE SW Section 12-5-9w, location; Palmer's No. 3 Uiery, SE NW NE Section 34-6-10w, location; Ray Stephens, Inc.'s No. 1 Plummer, NE NW SW Section 34-6-10w, pits.

Jackson County

Pendleton's No. 2-A Stokes, SE SW SW Section 11-1n-20w, old well in the Altus field, Jackson County, was deepened from 1,393 ft. to 1,420 ft. and pumped and flowed 40 bbl. of oil daily. Aloma Oil Co.'s No. 2 Robertson, SE NE SE Section 15-1n-20w, had granite wash at 1,357-73 ft., total depth, and pumped 10 bbl. of oil daily. Hanna's No. 1 Hardcastle, NW NW SW Section 15-1n-20w, was bottomed at 1,700 ft., plugged back to 1,580 ft., and was dry and abandoned. Henry's No. 2 Henry, NE NW NW Section 15-1n-20w, was bottomed at 1,680 ft., plugged back to 1,593 ft. and was shot, pumping 4 bbl. of oil daily, with 200,000 cu. ft. of gas. Ray's No. 2 Mathis, NW SW SE Section 32-1n-19w, was dry and abandoned at 2,651 ft., total depth.

In Grady County T. H. McCasland's No. 1-A Woods, SW NE NE Section 17-3n-5w, Knox field, had dug pits.

In Stephens County, Pace Petroleum Co.'s No. 2-A Dierks, NE NW NW Section 12-2s-8w, was drilling below 2,077 ft.

Kiowa County

Fields & Nagle's No. 6 Oster, SW SW SW Section 27-7-17w, Komalty area, Kiowa County, had lime at 829 ft., total depth 999 ft., plugged back to 987 ft., and was completed, pumping 10 bbl. of 31.7-gravity oil and 3 bbl. of water daily.

In Comanche County, Wichita Oils, Inc.'s No. 16 Palmer, NW NW SE NW Section 28-2n-10w, Lawton area, was completed for 2 bbl. of oil daily at total depth of 1,057 ft.

Carter County

Gulf Oil Corp.'s No. 8 Garrett, C NW SW Section 27-2s-3w, old well in the Fox pool, Carter County, total depth 8,315 ft., perforated casing at 5,520-97 ft., acidized and flowed 319 bbl. of oil in 24 hours. Same company's No. 1 Johnson A, C SE NW Section 27-2s-3w, old well, was plugged back from 7,867 ft. to 5,266 ft., perforated casing and acidized, and swabbed and flowed 378 bbl. of oil daily. Gibson & Jennings' No. 2 Mertens, NW NW NW SE Section 20-4s-2w, Hewitt field, was bottomed at 1,856 ft., and produced 42 bbl. of oil daily.

Gibson & Jennings' No. 1 Griffin, SE NW SE Section 20-4s-2w, was drilling below 1,400 ft. Jones' No. 5 Sullivan, NE NW SE Section 36-4s-2w, was rigging up rotary tools. McGraw's No. 6 Smith, NE NE NW Section 5-4s-3w, was moving in machine.

Tinsley Field Is Extended; Begin Several New Tests

By GEORGE WEBER

JACKSON, Miss., May 20.—Another week of wildcat drilling without shows of new discovery failed to slacken drilling activity in Mississippi, with several new tests beginning, and leasing continuing strong. Tinsley and Pickens fields are in the spotlight with edge tests determining their possible further extent, and numerous wildcats in Mississippi, Alabama and Georgia are being watched. Four wildcats were abandoned during the past week without shows, six new wildcat tests were announced and a seventh is to resume drilling after abandonment several days ago.

Tinsley

In the Tinsley field, of Yazoo County, production was further extended one location to the north by completion of Slick-Urschel Oil Co.'s No. 5 Slick, which has 24 ft. of saturated Woodruff sand and made 96 bbl. on the first hour's gage through a ¾-in. choke. In the south end of the field, an inside location, Union Producing Co.'s No. 5 Woodruff was also completed with 12 ft. of Woodruff sand.

Daily production at Tinsley has reached 8,280 bbl., bringing accumulated production to 964,500 bbl. last week. Flowing wells are producing through reduced chokes, and the potential of the field is estimated at about 32,000 bbl. daily. The new producing horizon opened several days ago by Union Producing Co.'s No. 5 Perry has been named the Perry sand. It occurs in the discovery well above the Stevens sand at 4,880-4,908 ft. in the Eutaw formation, and is producing on the pump.

Attention is being attracted to the area, southeast of the field, with the beginning of Whigate Oil Co.'s No. 2 Robertson, S½ NW SE Section 20-10-3, which is believed located across the fault which the operators' No. 1 Robertson cut some weeks ago. This may find the Woodruff section thickening to the southeast, as has been found to the north, northwest and west, and, if so, will open much new acreage to production, unless it is below the water level, as in the case of the east edge in Section 7-10-3. In that area last week, Union Producing Co.'s No. 1-B Woodruff, Section 18-10-3, encountered the Woodruff sand at 4,900 ft., and found it carrying salt water. The test is apparently lying on the north edge of the fault known to extend through that section, as it ran structurally 245 ft. lower than the company's No. 4 Woodruff to the southeast. The test is located between a dry hole two locations to the north, and a producer in a south offset position.

Pickens

The Pickens field, in eastern Yazoo County, will within the next few days, be proven or limited for production in two directions. In a northeast diagonal offset location to discovery, Exchange Oil Co.'s No. 1 Dixon is below 4,870 ft., having topped the chalk by samples at 3,890 ft. To the south, the offsetting No. 2 Wilburn, also drilled by Exchange, topped the chalk at 3,935 ft. Both tests seem to be running flat structurally with the discovery well. Operations on several outpost tests are awaiting outcome of these two important wells.

Wildcatting

Four wildcats in Attala, Holmes, Madison and Stone counties, were abandoned this week with no shows, but drilling activity increased with the announced locations of three new tests, the rigging up on four additional ones and spudding of six wildcats.

In Itawamba County, northeast Mississippi, G. C. Grasty's No. 1 Kentucky Lumber Co. encountered a soft sand section at 2,998-3,010 ft., and upon bailing showed a rainbow of oil and a dense brine. The test is drilling in sandy lime below 3,033 ft. with cable tools.

Operations began last week on Gulf Refining Co.'s No. 1 Cason, a Tallahatchie County wildcat, drilling on the large Reid block. Other tests began in Grenada, Holmes, Madison, Monroe, Rankin, Smith and Yazoo counties.

Alabama activity consists of four drilling tests in Choctaw, Lawrence, Marion and Mobile counties, the Lawrence County test, D. V. Mann's No. 1 Jackson, having spudded recently.

MISSISSIPPI COMPLETIONS

Attala County

F. R. Jackson's No. 1 Federal Land Bank, C SW Section 29-16n-9e, temporarily abandoned 4,515 ft.

Holmes County

Exchange Oil Co.'s No. 1 Bertha Russell, NE cor. NE SE Section 32-15n-2e, dry and abandoned 5,490 ft.

Madison County

Ralph Johnson's No. 1 Minerva Young and others, C SE NE Section 32-11n-4e, top Eutaw 5,030 ft., sand 5,065-70 ft., no show, dry and abandoned 5,078 ft.

Stone County

H. I. Morgan's No. 1 Dantzler Lumber Co., NW SE Section 8-4s-12w, dry and abandoned 8,940 ft.

Tinsley Field—Yazoo County

Slick-Urschel Oil Co.'s No. 5 T. B. Slick, 660 ft. west, 100 ft. south, NE cor. Section 2-10n-3w, 96 bbl. first hour, ¾-in. choke, Woodruff sand 4,856-80 ft., total depth 4,889 ft. Union Producing Co.'s No. 5 Woodruff, C SW SW Section 13-10-3, 264 bbl., pumping, Woodruff sand 4,562-74 ft., total depth 4,597 ft.

MISSISSIPPI

Grenada County

Schuba Valley Prod. Co.'s No. 1 Connecticut General Life Ins. Co., C NE SE Sec. 28-23n-5e. Loc.

Ed Spencer's No. 1 Gillon, Sec. 17-22n-7e. Spdd.; S.D. 360 ft.; S.D.; R.U.

Holmes County

Exchange Oil Co.'s No. 1 S. D. Gwin, 2,170 ft. S line, 1,470 ft. E line, Sec. 6-16n-1e. R.U.

Exchange Oil Co.'s No. 1 W. M. Thurmond, C NW NW SE Sec. 21-15n-3e. Set 10¾-in. csg. 653 ft.; W.O.C.

Hawkins & Howell's (A. C. Varner's) No. 1 P. S. Jones, Sec. 27-15n-1e. Set 10¾-in. csg. 518 ft.; drlg. sh. 2,713 ft.

A. H. Rowan's No. 1 Eakin, C NW SE Sec. 20-14n-1e. Set surf. csg.; drlg. ahead.

Rowan Drlg. Co.'s No. 1 Smith, C NW NE Sec. 7-14n-1w, Set 10¾-in. csg. 593 ft.; drlg. 5,281 ft.

Madison County

Ralph A. Johnston's No. 1 F. H. Ray, C SE SW Sec. 6-8n-3e. M.I.M.

W. G. Ray Drlg. Co.'s (formerly E. L. Foster's) No. 1 Haffey, NE cor. S½ Lot 5, Sec. 8-10n-5e. Loc. T.A.

Yazoo County

Exchange Oil Co.'s No. 1 L. B. Dixon, C SW SW SW Sec. 29-12n-3e. Drlg. 4,870 ft.

Exchange Oil Co.'s No. 2 M. P. Wilburn et al, 330 ft. W, 990 ft. S, NE cor. Sec. 31-12n-3e. T. chalk 3,935 ft.; cg. 4,865 ft.

Hassie Hunt's No. 1 H. A. Lammons, C SE NW Sec. 1-10-3. Set 10¾-in. csg. 425 ft.; drlg. 4,573 ft., chalk.

E. C. Johnston's No. 3-B Brumfield, 423 ft. W. 660 ft. N SE cor. SW NE Sec. 2-10-3. T. chalk 4,635 ft.; set 5½-in. csg. 4,789 ft.; T.D. 4,816 ft.; completing.

Sells Pet. Co.'s No. 1 Falkner, C SE NE Sec. 34-9n-4w. Drlg. 472 ft.

Slick-Urschel Oil Co.'s No. 6 T. B. Slick, SW cor. SE Sec. 35-10-3. M.I.M.

C. L. Thompson, Rowan & Hope's No. 1 Joe Elliott-Mrs. Mary Edwards, 900 ft. S. 2,310 ft. W of NE cor. Sec. 30-10n-3w. Loc.

Union Prod. Co.'s No. 2-A Friley, C NE SE Sec. 14-10-3. Set 16-in. csg. 57 ft.; drlg. 4,280 ft.

Union Prod. Co.'s No. 2 Twiner, C NW SE Sec. 1-10-3. T.D. 3,875 ft.; set csg.; W.O.C.

Union Prod. Co.'s No. 3 Twiner, C NW NW Sec. 1-10-3. Set 10¾-in. csg. 600 ft.; drlg. 4,150 ft.

Union Prod. Co.'s No. 1-B Woodruff, C SW NW Sec. 18-10-2. Drlg. sh.&L. 5,360 ft.

Union Prod. Co.'s No. 7 Woodruff, C SE SE 13-10-3. Set 10¾-in. csg. 602 ft.; rmg. 3,959-4,186 ft.

CRUDE-OIL PRICES IN REPRESENTATIVE FIELDS

Complete crude-price schedules are now being published in the first issue of each month. The last complete schedule was published in the May 2 issue. All changes in crude-oil-price schedules will be published completely in the first issues following the announcement of the changes. Following are representative crude-price schedules in barrels (42 gal.):

East Texas	$1.10
Conroe	1.37
Tepetate, Louisiana	1.03
Smackover, Arkansas, heavy	.73
Illinois basin	1.05
Pecos County, Texas	.78
Lance Creek, Wyoming	.77
Bradford, Pennsylvania	2.75

Gravity Schedules

Top prices include all gravities above grades designated, and low prices include all gravities below grades designated:

	Signal Hill, California*	Oklahoma, Kansas	Gulf Coast Texas
14-14.9	$.065	...	...
15-15.9	.65	....	...
16-16.9	.65	....	...
17-17.9	.65	....	
18-18.9	.65	....	
19-19.9	.69	....	$0.8
20-20.9	.73	$0.70	.88
21-21.9	.78	.72	.90
22-22.9	.82	.74	.92
23-23.9	.86	.76	.94
24-24.9	.90	.78	.96
25-25.9	.95	.80	.98
26-26.9	.99	.82	1.00
27-27.9	1.03	.84	1.02
28-28.9	1.07	.86	1.04
29-29.9	1.10	.88	1.06
30-30.9	1.14	.90	1.08
31-31.9	....	.92	1.10
32-32.9	....	.94	1.13
33-33.9	....	.96	1.14
34-34.9	....	.98	1.16
35-35.9	....	1.00	1.18
36-36.9	....	1.02	1.20
37-37.9	....	1.04	1.22
38-38.9	....	1.06	1.24
39-39.9	....	1.08	1.26
40-40.9	....	1.10	1.28

*Effective February 1, 1940.

Crude-Oil Prices

Effective May 18 Union Oil Co. followed by other leading crude-oil purchasers in California, adopted the price schedule of the Standard Oil Co. of California in the fields in which they purchase. The Standard Oil schedule became effective February 1. It reduced prices on crudes of the lower grades.

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Personal Paragraphs

R. J. BRENNAN has resigned as vice president of Forest Oil Corp., Bradford, Pa., and will operate independently.

FLOYD NELSON, Texas Co., and E. J. McKEE, of Western Natural Gas Co., have been elected secretary and treasurer, respectively, of the California Bilge Club.

DR. ROYD R. SAYRES of the Public Health Service has been nominated by the president as director of the Bureau of Mines, succeeding DR. JOHN W. FINCH. Dr. Sayres has been acting director under detail by the president. The nomination has been referred to the Senate mines and mining committee, which has not yet acted upon it.

W. W. PORTER II, left recently for the Philippines on an oil consultation trip.

WILLIAM H. COURTIER has been apointed assistant chief geophysicist of Phillips Petroleum Co., Bartlesville, Okla.

CECIL HAGEN, former petroleum geologist with the Superior Oil Co. of California, has resigned to do consulting work in Houston, Tex.

RAYMOND A. MOLINA, district petroleum engineer for the Standard Oil Co. of Venezuela, has been transferred from Caripito to Cumarebo, Estado Falcon.

ROBERT FRONTHINGHAM, managing director of the Raffineria di Napoli, S.A., Italiana, refinery operating subsidiary of Socony-Vacuum Oil Co., Inc., at Naples, has arrived in the United States for a combination business and vacation visit.

J. Z. HILL, purchasing agent for Gulf Oil Corp. at Houston, Tex., has been elected one of nine district vice presidents of the National Association of Purchasing Agents. The vice presidents become members of the executive committee for the coming year.

W. A. MONTGOMERY, with the Illinois Pipe Line Co. for the past 13 years and stationed at Iraan, West Texas, has been promoted to office and general superintendent and transferred to the company's Casper, Wyo., office. Mrs. Montgomery and the two sons will leave for Casper when the school year is finished this June.

M. J. LEONARD, Parkersburg, W. Va., has been elected a director of South West Pennsylvania Pipe Lines and Southern Pipe Line Co., succeeding W. P. NORRIS, who retired.

FLOYD STEVENSON, assistant superintendent of production for the Phillips Petroleum Co. at Odessa, Tex., has been moved to the equipment engineering department in the Bartlesville office of the company.

T. B. GREGORY, chairman of the board of Lone Star Gas Co., Pittsburgh, Pa., accompanied by a party of investors, visited company properties in North Texas. Mr. Gregory intimated that Texas gas will ultimately be used in New York.

LEE E. LOEFFLER, assistant secretary and treasurer of Standard Oil Co. of Kansas, Houston, Tex., left last week on a combined business and pleasure trip to New York City.

R. P. McLAUGHLIN, general manager of Dominguez Oil Fields Co., discussed the development of petroleum engineering in California at the May meeting of the coastal district of the A.I.M.E. held at Pierpont Inn, Ventura.

HEATH RENFRO, for the past 2 years chief engineer in the Houston district of the Oil and Gas Division of the Texas Railroad Commission, has been transferred to the Corpus Christi district. Mr. Renfro replaces WALTER STEIN, who resigned recently.

GEORGE F. PRUSSING and H. R. GREATWOOD, of Union Oil Co., and JULIAN CAMPBELL, of J. A. Campbell, were the principal speakers at the May meeting of the Taft chapter of the California Natural Gasoline Association held at the Petroleum Club in Taft.

R. R. HOBSON, general manager of Houston Oil Co., Houston, Tex., has been receiving congratulations from his numerous friends for having completed 38 years of continuous service with his company. Mr. Hobson started to work for the old Higgins Oil & Fuel Co., predecessor of Houston Oil Co., in the Spindletop field, May 15, 1902.

G. TAIT, of Renfrewshire, Scotland, has gone to Balik Papan, Borneo, for the Bataafsche Petroleum Mij.

K. F. DALLMUS, geologist for the Standard Oil Co. of Venezuela, has been transferred to Caracas, Venezuela.

A. D. AITKEN, JR., formerly petroleum engineer for Stanolind Oil & Gas Co., Houston, Tex., is now engaged in consulting work at Houston.

GERHARD GRASSMUECK, mining and geological engineer, is consultant for the Cia. Ferrocarrilera de Petroleo, Comodoro Rivadavia, Argentina.

E. V. BAUSERMAN, valuation engineer for the U. S. Bureau of Internal Revenue, has been transferred from Washington, D. C., to Dallas, Tex.

BERNARD N. MOORE, formerly geologist for the Caracas Petroleum Co. of New York, is geologist in charge for the Atlantic Refining Co. at Port-au-Prince, Haiti.

ROSS S. STERLING, Houston, Tex., president of Sterling Oil & Refining Co., and former governor of Texas, returned last week from a business trip through Mississippi.

DAN B. COURVILLE, for the past 9 years field foreman in charge of production for the Gulf Oil Corp. in Ward and Winkler counties in West Texas, has been promoted to assistant superintendent of the West Texas district and has moved his offices from Wickett to Odessa. E. A. WICKERT has succeeded him in the Wickett office.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The Juanita Oil & Gas Co., of Madill, Okla., is composed entirely of women investors. Mrs. Carrie Arbuckle is president.

The Tulsa Clearing House Association shows that deposits in Tulsa banks have risen from $3,598,479 at this period in 1910, to $11,646,198 at this time in 1915.

Oil operators in the old Tidioute field, Pennsylvania, are considering the project of drilling to 3,000 ft. in that field. An old well bottomed at 1,800 ft. may be deepened to what would be a record-breaking depth in northern Pennsylvania.

The war in Europe has caused a shortage of glycerin in this country which is affecting the torpedo companies in the oil regions.

20 YEARS AGO

According to Tide Water Topics the discovery of the natural flooding of oil wells in the Bradford fields was first noticed in 1890, but was kept a secret for 3 years. One of the early flooded wells produced 155,000 bbl. of oil before it was exhausted. It was on a 5-acre "location" and produced from 20 ft. of Bradford sand.

W. L. McCloy has resigned as general manager of the Philadelphia Co., a natural-gas concern, to begin his duties as vice president of the Guffey-Gillespie Oil Co., in charge of production. He will have headquarters in Tulsa.

Standard Oil Co. of Louisiana purchases the Hunter oil properties in Arkansas for a price said to have been $2,000,000.

10 YEARS AGO

A diesel electric-drive outfit is being used to drill a well in the Inglewood field in California by Standard Oil Co. of California. It attracts much attention.

The capacity of American natural-gasoline plants is rapidly approaching 10,000,000 gal. of the product per day.

LAURENCE MELZER, is employed by the Stanolind Oil & Gas Co., doing gravity-meter work, in the Midland, Tex.

JOHN M. LOVEJOY, president of Seaboard Oil Co., New York, was a visitor in the Dallas, Tex., office last week. He is on his way back to New York after a visit in California.

WILLIAM PARKER, vice president and head of the aviation department of Phillips Petroleum Corp., arrived in Los Angeles last week from Bartlesville, Okla., on business.

KENNETH BOWIE has returned after some time spent in Havana, Cuba. He is now with the exploitation department, Shell Oil Co., Inc., Houston, Tex.

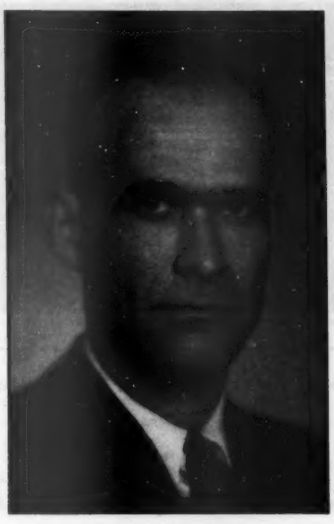
E. W. BECK, manager of purchases of General Petroleum Corp., with offices in Los Angeles, Calif., has been elected vice president of the Purchasing Agents Association of Los Angeles.

E. T. HECK, of the West Virginia Geological Survey and currently doing graduate work at the Pennsylvania State College in the school of mineral industries, has been appointed a member of the production advisory committee of the Pennsylvania Grade Crude Oil Association.

BILL SMITH, scout in the Texas Panhandle area for Phillips Petroleum Co. and stationed at Amarillo, Tex., and MISS HELEN DEMPSEY, secretary to G. G. OBERFELL, vice president of the research department of Phillips Petroleum Co. in Bartlesville, Okla., were married the first of this week and are spending their honeymoon in New Mexico, after which they will be at home in Amarillo.

Straight to the Refinery

In June 1925 J. Porter Langfitt traveled almost directly from the line of graduates of Lehigh University, in Bethlehem, Pa., to the Pure Oil Co.'s refinery in Marcus Hook, Pa., some 125 miles away. Young Langfitt, with his freshly earned degree in mechanical engineering, started on his first job in the plant yard as a construction engineer. Later he was transferred to the "Hook's" processing department, and by successive steps he rose to stillman.



J. PORTER LANGFITT

Twelve years later, in June 1937, Mr. Langfitt, who had not been standing still, was advanced to his present post in charge of Pure Oil refineries as assistant to Vice Pres. C. B. Watson. In the years that had elapsed since he entered the Marcus Hook plant, then one of the East's best-known refineries, Mr. Langfitt had worked in all Pure Oil refining plants as an engineer from the Chicago headquarters of the company's distillation and process departments.

No arm-chair executive, Mr. Langfitt keeps in first-hand touch with the plants under his direction by means of frequent field visits. His inspection trips cover the company's present Texas, Ohio, West Virginia, and Michigan refineries.

Mr. Langfitt, who was born in Parkersburg, W. Va., married Ann Shattuck Neal, of the same city, in 1929. Mr. and Mrs. Langfitt, with their two young daughters, reside in Winnetka, Ill.

JOSEPH S. BRIDWELL of Wichita Falls, Tex., was elected president of the West Texas Chamber of Commerce.

W. F. CLINGER, president of the Pennsylvania Grade Crude Oil Association, has been appointed to the state Council of Education by Gov. Arthur H. James.

GUILLERMO ZULOAGA, last year with the Servicio Tecnico de Geologia, has been appointed assistant manager of exploration for the Standard Oil Co. of Venezuela, Caracas.

HENRY FORBES has been transferred from Wyoming to Texon, Tex., by the Continental Oil Co., where he is now doing work in the pipe-line department.

W. R. EGOFF, petroleum engineer for Phillips Petroleum Co. and formerly stationed in the Goldsmith field of Ector County, West Texas, has been transferred to Seminole, Okla.

DR. CHARLES D. LOWRY, JR., of Universal Oil Products Co., was a speaker at the meeting of the Department of Manufacture of the National Petroleum Association held in Hotel Statler, Buffalo, N. Y., on May 21. His subject was "Doctor Sweetening."

L. E. PATTERSON, vice president of the North Texas Geological Society, announced last week that Saturday and Sunday, May 25 and 26, would be the date of the society's North Texas field trip. It will be under the direction of M. G. CHENEY, independent oil operator and nationally known petroleum geologist of Coleman, Tex. The party will study the Canyon and Strawn outcrops in the Brazon and Trinity River valleys.

MARCEL PRETTRE, professor of physical chemistry at the University of Lyon, France, delivered a paper on the results of recent research in the study of motor fuels at the spring meeting of the Belgian Petroleum Institute, held at Brussels, before the German invasion.

C. S. LINCOLN, Standard Oil Co. of California, San Francisco, and GEORGE F. MacDONALD, Richfield Oil Corp. of New York, New York, have been appointed to the American Petroleum Institute's Division of Marketing lubrication committee, bringing to 26 the total membership of the committee, according to D. V. STROOP, secretary of the division. WILLIAM H. CORREA, Socony-Vacuum Oil Co., Inc., New York, is chairman of the committee and R. A. LUDLOW is director.

Shifts: C. M. HALL, superintendent, George F. Getty, Inc., from Bakersfield, Calif., to Santa Fe Springs, Calif.; GEORGE W. KING, engineer, Shell Oil Co., Inc., from Hobbs, N. M., to Englewood, Colo.; J. H. KREUGER, geologist, Hill & Hill, from McAllen, Tex., to Burlington, Wis.; G. E. ARNOLD, engineer, Aetna Oil Service, from Refugio, Tex., to Ellinwood, Kans.; SAMUEL BUTLER, JR., engineer, Texas Co., from Dallas, Tex., to Port Arthur, Tex.; J. J. FOMMER, superintendent, Ohio Oil Co., from Houston, Tex., to Shreveport, La.; P. J. RODGERS, geologist, Skelly Oil Co., from Cameron, Mo., to Bethany, Mo.; D. B. FERGUSON, JR., president, Mid-Continent Well & Drilling Co., from Oklahoma City, Okla., to Fairfield, Ill.; ROBERT L. BUCHANAN, Lago Oil & Transport Co., Ltd., from Aruba, Netherland West Indies, to Cia De Petroleo, Lago, La Salina, Venezuela.

J. E. SMITH, of the Northwestern Oil Co. of Superior, Wis., had a neat answer during the congressional hearing on the Patman chain-store bill. He emphasized that service stations are not stores, that they are fine tax-collecting units for both the federal and state governments.

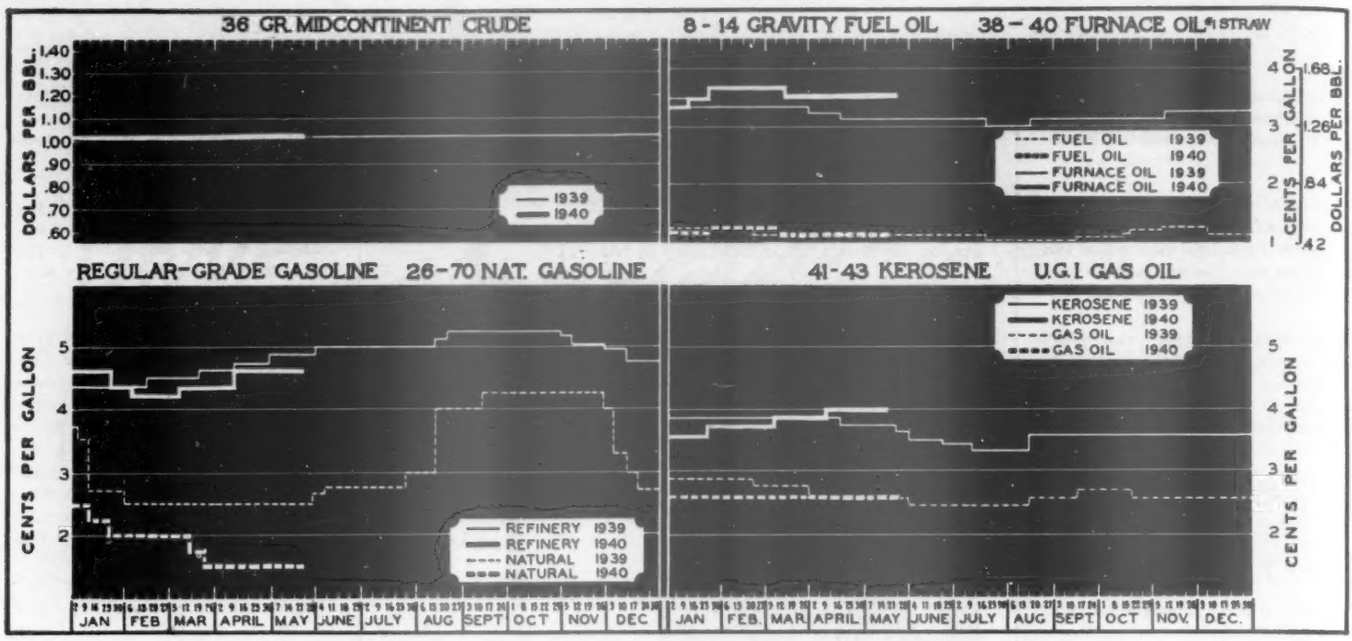
ROY O. ARMSTRONG has begun work as a member of Federal Tender Board No. 1 at Kilgore, Tex. The board, originally with three members, had operated for several years with two members, J. W. STEELE, chairman, and COL. E. W. CHATTERTON. Mr. Armstrong was appointed by HAROLD L. ICKES, secretary of the interior. He has been employed by the U. S. Bureau of Mines at Olean, N. Y., for the past year. Formerly he worked with oil companies in South America and had done considerable work in major United States fields.

CHRISTOPHER STORY, vice president in charge of tanker operations of Cities Service Co., and PAUL BLAZER, president, Ashland Oil & Refining Co., appeared before the House committee on merchant marine hearing at Washington, D. C., on oil-tanker rates.

WINTON W. HAMILTON, refining engineer, in the technical-research division of Socony-Vacuum Oil Co., has returned to New York after spending several months in Italy where he was engaged in work connected with the operation of polymerization units.

N. T. GILBERT, general manager of the Midstates Oil Corp., Tulsa, has been appointed chairman of the 1940 budget and finance committee of the Independent Petroleum Association of America, and T. F. BIRMINGHAM, president of the Margay Oil Corp., also of Tulsa, vice chairman.

CLARENCE LUNDY, seismologist of Geophysical Service, Inc., Dallas, Tex., has returned to America from Dutch New Guinea, where he spent 20 months in the jungles prospecting for oil. On the return trip he visited the Island of Bali. On arrival in this country he visited his old home at Westhope, N. D.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Group 3 Gasoline Market Limps and Lubricants Take Another Drop

By T. F. SMILEY

FOR the second time in its history the gasoline market is stabilized," said the disgusted sales manager of a large refining company this week when he was questioned about conditions in the Group 3 area. "The first time was during the few months of operation under the N.R.A. code. Then prices yielded a reasonable profit. Now prices are stabilized at a level that doesn't even return the cost of manufacture. But they're stabilized. They have scarcely moved since last February. I wouldn't bet a dime on whether they go up a little or stay where they are all summer."

Not all in the trade took so jaundiced a view, but nobody detected any clear improvement in the tank-car market, though third-grade material was perhaps a bit firmer. Local tank-truck business in some instances was described as excellent.

Hand-to-Mouth Buying

Jobbers apparently had resumed hand-to-mouth buying. One evidence of this lay in the fact that within a day or two after booking orders refiners were receiving "rush shipment" telegrams, significant of exhausted supplies. It is reasoned that if jobbers believed higher gasoline prices were imminent they would not pursue such a policy but would stock up while cheap material was available.

It developed in the past week that one reason for the laggard gasoline market may lie in the fact that some small independent refiners did not adopt the A.S.T.M. method of testing the antiknock quality of their products when the others took that step last month. These refiners, according to reports, are still using the L-3 method, which enables them to quote a lower price on any given grade than that of competitors using the A.S.T.M. method. If nothing is said about antiknock tests the buyer presumably believes he is getting a bargain price. A few, it is understood, do not conceal the fact that they are still using the old L-3 method. A small number are using both methods, quoting prices accordingly.

The presence in the market of even a small quantity of apparently underpriced material has a weakening influence on the whole price structure. Refiners say that it costs them a full quarter cent more to make a gallon of 73-octane gasoline, A.S.T.M. test, than it does to make a gallon of 74-octane, L-3 test.

The plan of having a refinery shutdown of 30 days or so as a means of bringing the nation's stocks to an economic level is seriously suggested. It is put this way: The well shutdown last August halted the declining prices of crude and imparted a healthier tone to both the crude and the refinery markets. Why wouldn't a refinery holiday have equally beneficial results and put the gasoline market on its feet? It is declared there would be no consequent shortage of any product with the possible exception of kerosene.

In the total reduction of 746,000 bbl. in gasoline stocks in the week ending May 11 the Mid-Continent's part was a withdrawal of 91,000 bbl. For the first time this year the declines in inventories were pretty well scattered throughout the various refining areas.

Waiting for a Break

Natural-gasoline manufacturers said they were waiting patiently for a break, without any clear idea of where it would come from or when. This division never before has faced such conditions as confront it in 1940. No change in either prices or outlook was reported.

Bright stocks and neutrals suffered another decline. Refiners continued to assert that the Mid-Continent market was steady and that the only reason for reducing prices was that the weak market in the East made it unavoidable.

Heating oils were steady and kerosene was firm. Tractor fuels were active, with prices holding well. Wax was moving in substantial quantities at unchanged prices. Heavy industrial fuel offerings were plentiful.

Refined Oil Market Barometer

Heightened demand for gasoline is offset by the increasing need of outlets for bursting stocks at the Gulf, and there is growing doubt as to whether even the peak of the consuming season will see profitable tank-car prices. Extreme dullness in the natural-gasoline market continued. Lubricating oils in Mid-Continent off another cent. Wax steady.

MID-CONTINENT. Gasoline quiet. Naturals weak. Lubricants down. Light fuels steady.

EAST COAST. Marked pickup in gasoline demand, but buyers disinclined to lay in stocks.

GULF COAST. Gasoline weak. Need of outlets acute. Fuel oils and kerosene softer.

PENNSYLVANIA. Gasoline consumption rising, but market still easy. Few changes generally.

CALIFORNIA. Gasoline extremely weak and further softening expected. Fuel oil soft.

CHICAGO. Gasoline offerings plentiful. Unfavorable weather impeding tractor-fuel sales.

Increased Demand Supporting Motor-Fuel Market in East

By H. STANLEY NORMAN

NEW YORK, May 21.—Increased consumption supplied the resistance needed by the motor-fuel market in the northeastern part of the country last week. Prices were unchanged at the important seaboard terminals on most refinery products. Kerosene was in a strong position on the Atlantic and Gulf coasts and prices were also up an eighth of a cent in the western Pennsylvania district.

Most suppliers quoted 6 cents per gallon for regular gasoline to the barge customers and 6¼ cents for tank-car delivery. Reports circulated that 72-74-octane gasoline could be purchased in barges at 5¾ cents, but business on this scale was limited and could not be considered representative of the market.

There is still no tangible evidence of any increase in offshore movement as a result of European conditions but the prospects for improvement in demand from abroad are doubtless exerting a psychological influence on the market structure. Exporters anticipate that European war consumption will begin to assert itself in the form of increased demand within 2 weeks.

There is no way of anticipating how extensive the export demand will grow since it is completely dependent upon scope and nature of the European fighting. The Allies are committed to a policy of purchasing all possible surplus petroleum from Rumania for the purpose of keeping it from the hands of Germany and this program will necessarily continue so long as existing battle lines prevail.

Cargo trading on the Gulf Coast is reported to have experienced a revival so far this month with emphasis on light fuels and residual oil. The coastwise movement of motor fuel is following routine lines but is due for acceleration within the next few weeks.

Consumption in the northern part of the country is gradually moving into peak-season pace and will reflect itself in greater movement from the Gulf in the near future.

Bunker C fuel oil is offered on the Gulf at a range of 75 to 90 cents per barrel and cargoes of diesel fuel there are offered and moving at a range of 3½ to 3¾ cents per gallon.

Refiners are still unwilling to crowd the light fuels on the market at concession prices, feeling that the winter demand will repay them abundantly for the inconvenience and cost of building stocks during the off season.

The fuel-oil market in the northeastern section is on firm ground. Bunker C fuel oil is in relatively strong demand at the prevailing price of $1.50 per barrel and the light fuels range from 5.4 to 5.5 cents per gallon in the tank-car market. No. 2 fuel oil in tank wagons around New York is generally quoted at 7.4 cents per gallon. Kerosene in tank wagons in this vicinity is quoted at 8.4 cents per gallon and the demand is reported to be growing beyond the producing capacity.

Western Pennsylvania refiners are quoting 5 to 5¼ cents per gallon to tank-car customers. Consumption in the farming districts is just now reaching its peak, plowing having been delayed in many areas by weather conditions.

Movement of lubricating oils from the western Pennsylvania district into domestic channels of consumption was reported to be picking up but there is no change in the export side of the picture. Refiners are holding lubricating-oil prices at levels unchanged from the past week on the strength of domestic demand. Shipping instructions from contract customers are being received in greater volume with the upturn in motor-car operation.

Bright stocks range from 20 to 22½ cents and neutrals from 20 to 25½ cents, depending upon viscosity and pour point. Dark cylinder stocks range from 12 to 18 cents.

Gulf Coast Markets

HOUSTON, Tex., May 21.—The rapid drainage obviously being made on petroleum supplies of warring countries as a result of the increased activity in the European conflict was a subject of discussion in Gulf Coast refinery market circles the past week. There was speculation as to whether this heavy use of oil by mechanized units would force those countries to call on the United States to replenish their stocks, whether they still have plentiful supplies or other sources capable of meeting their needs.

Disappointed so far in expectations that the war would mean a boom in their export business, Gulf Coast refiners are not building up any substantial hopes of increased demand. The need for relief is becoming more acute.

In the meantime the domestic market continues inactive. Sales of gasolines from refineries still are confined to the routine trade despite the arrival of favorable weather and vacation periods to inspire motoring.

Gulf Coast refiners reported as dull a week as they have experienced in months. Though the scarcity of tankers is a major problem, suppliers are puzzled that they do not receive any important inquiries. Obtaining tankage for storage is becoming an increasingly serious problem for a number of refiners.

Competition of Mexican oil was felt with growing keenness the past week as fuel-oil markets developed further weakness. Open fuel-oil prices were unchanged although it generally was reported that material could be obtained below quoted levels.

The volume of Mexican oil offered and sold on the Gulf Coast has been steadily increasing, and generally at appreciable margins below domestic oils. The large purchase of Mexican crude by one of the large independent integrated companies reported the past week was a matter of concern.

Weakness in fuel oils was manifested in kerosenes and burning oils also, although more resistance was displayed in those products. Generally refiners are not overloaded with kerosenes or burning oils due to contracts remaining to be filled, but no new demand is materializing, nor is any expected in the near future. Although refiners for the most part are not receptive to offers below 4½ cents for kerosene, they are asking no more than that. No. 2 fuel apparently is being pegged around 3½ cents.

Due to lack of new business, gasoline prices continued uncertain. There was nothing to warrant any changes in previously published quotations but few would dispute the likelihood that any of the quoted prices could be shaded for material on immediate shipment. Quotations continued to range from 4¼ cents to 4¾ cents for material of varying octane ratings.

Lubricating oils were unchanged.

A. P. I. Weekly Refinery Statistics

Week Ended May 18, 1940

	Capacity reporting (per cent)	Total gasoline stocks (bbl.)	Residual fuel-oil stocks (bbl.)	Gas oil and distillate stocks (bbl.)	Daily crude runs (bbl.)
East Coast	100.0	23,847,000	8,752,000	6,598,000	590,000
Appalachian	91.0	4,022,000	654,000	377,000	124,000
Ind., Ill., and Ky.	89.5	17,928,000	3,269,000	2,701,000	587,000
Okla., Kans., and Mo.	76.9	7,957,000	1,942,000	1,063,000	293,000
Inland Texas	59.6	1,936,000	1,454,000	284,000	118,000
Texas Gulf	85.3	14,798,000	5,332,000	3,769,000	845,000
Louisiana Gulf	97.6	3,014,000	991,000	851,000	124,000
N. Louisiana and Ark.	51.5	539,000	461,000	215,000	45,000
Rocky Mountain	55.5	1,627,000	593,000	134,000	48,000
California	87.3	18,287,000	78,607,000	10,063,000	520,000
Total reported	85.1	93,955,000	102,055,000	26,055,000	3,294,000
Est. unreported	.....	7,060,000	2,190,000	1,290,000	371,000
*Est. total	.....	101,015,000	104,245,000	27,345,000	3,665,000
*Est. total previous wk.	.....	101,317,000	103,985,000	26,552,000	3,620,000
*May 19, 1939	.....	85,705,000	110,348,000	27,207,000	3,460,000

*Bureau of Mines.

Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATE)

Week ended May 11, 1940	257,079,000 barrels
Week ended May 4, 1940	258,210,000 barrels
Week ended May 13, 1939	277,739,000 barrels

Figures do not include stocks of heavy, unrefinable California crude.

Tests in Alberta Foothills

On the Braseau structure, in the northern foothills west of Edmonton, Home Oil Co.'s No. 1, LSD 16, Section 7-43-17w5, is below 8,200 ft. with the Madison lime expected around 8,500 ft. Heavy gas pressure occasionally forces the mud column up to the rotary table.

Retail Oil Markets

Tank wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 21, 1940

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county, and city taxes. The gasoline is the regular or standard grade. In most areas lower grades and a premium grade also are available.

Standard Oil Co. (Indiana)

	Gasoline: Tank wag.	Gasoline: Dir.	Gasoline: Incl. tax	Kero. tank wag.
Chicago, Ill.	15.1	13.1	4.0	10.0
Decatur	13.6	12.1	4.0	9.5
Joliet	15.1	13.6	4.0	10.0
Peoria	15.1	12.7	4.0	10.0
Quincy	14.9	13.4	4.0	9.8
Davenport, Ia.	15.1	13.6	4.0	‡10.0
Des Moines	14.9	12.4	4.0	‡9.8
Mason City	15.3	13.8	4.0	‡10.2
Duluth, Minn.	16.9	15.4	5.0	10.8
Mankato	16.5	15.0	5.0	10.4
Minneapolis	16.5	14.5	5.0	10.4
LaCrosse, Wis.	16.5	15.0	5.0	10.4
Green Bay	16.9	15.4	5.0	10.3
Milwaukee	16.3	14.8	5.0	10.2
Detroit, Mich	13.6	12.1	4.0	7.6
Grand Rapids	13.2	11.2	4.0	9.0
Saginaw	14.2	12.7	4.0	9.3
Evansville, Ind.	16.6	15.1	5.0	†10.5
Indianapolis	16.8	14.3	5.0	†10.2
South Bend	16.8	15.3	5.0	†10.2
Fargo, N. D.	16.2	16.2	5.0	11.6
Huron, S. D.	17.0	15.5	5.0	10.9
Kans. City, Mo.*	14.4	12.9	4.0	8.0
St. Louis*	14.7	12.7	4.0	8.0
St. Joseph	14.4	12.0	4.0	7.9
Wichita, Kans.	13.3	11.6	4.0	7.5

*State tax 2 cents, 1-cent city tax, and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gal. or more, 1.5 cents off; minimum delivery 25 gal.

Stanolex Fuel Oil in Chicago

Effective April 18, 1940, f.o.b. Chicago, tank-wagon prices: Standard heater oil, 1-99 gal., 8.75 cents; 100-149 gal., 7.75 cents; 150 gal. and over, 7.25 cents. Stanolex fuel oil No. 1, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex furnace oil, 1-99 gal., 8.5 cents; 100-149 gal., 7.5 cents; 150-399 gal., 7 cents; 400 gal. and over, 6.5 cents. Stanolex fuel oil A, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex fuel oil B, 1-399 gal., 5.5 cents; 400-799 gal., 4.5 cents; 800 gal. and over, 4.25 cents. Stanolex bunker C fuel oil, 1-999 gal., 4.25 cents; 1,000 gal. and over, 3.25 cents.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Cons'r tank wag.	Gasoline: Divided dir.	Gasoline: Incl. tax	Kero. tank wag.
Ohio points	15.5	14.5	5.0	*12.0

*Includes state tax of 1 cent.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Atl'tic City, N. J.	11.6	12.7	4.0	8.4
Newark	11.6	12.7	4.0	8.4
Annapolis, Md.	12.35	14.35	5.0	9.5
Baltimore	12.75	13.75	5.0	9.0
Cumberland	14.15	16.15	5.0	10.0
Wash'gton, D. C.	11.00	12.00	3.0	9.5
Danville, Va.	14.95	17.45	6.0	11.5
Norfolk	13.75	16.25	6.0	11.0
Petersburg	14.05	16.55	6.0	11.7
Richmond	14.05	16.55	6.0	11.0
Roanoke	15.25	17.75	6.0	11.0
Charles'n, W. V.	14.55	17.05	6.0	12.6
Parkersburg	13.85	15.35	6.0	11.2
Wheeling	14.85	16.75	6.0	11.8
Charlotte, N. C.	16.90	16.50	7.0	11.8
Hickory	17.45	18.95	7.0	12.3
Mt. Airy	17.30	18.80	7.0	12.2
Raleigh	16.65	16.50	7.0	11.5
Salisbury	16.95	16.00	7.0	11.9
Charleston, S. C.	14.75	17.25	7.0	9.25
Columbia	15.60	18.10	7.0	11.5
Spartanburg	16.30	18.80	7.0	12.2

Price basis to Essolene undivided dealers: Dealer tank-wagon price less 0.5 cent per gallon. Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gal., consumer tank-wagon price at time and place of delivery; 100,000 gal. per year, consumer tank-car price plus 0.5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less 0.5 cent per gallon.

Effective January 16, 1939, in North Carolina the commercial consumer schedule became as follows: Single deliveries of 50 gal. or more, consumer tank-wagon price. Single deliveries of less than 50 gal., 4 cents per gallon over consumer tank-wagon price. Generally the posted consumer tank-wagon price will be equivalent to the dealer price, less 0.5 cent per gallon. The above policy also applies in South Carolina, effective January 23, 1939.

Discounts for kerosene, 1 cent off tank-wagon price for 25 gal. or more under contract (contract not necessary in Baltimore), except no discount in New Jersey.

Southern District

STANDARD OIL CO. (KENTUCKY)

	Gasoline: Cons'r tank wag.	Gasoline: Net dir.	Gasoline: Incl. tax	Kero. tank wag.
Atlanta, Ga.	17.5	17.5	7.0	11.0
Augusta	17.0	17.0	7.0	10.0
Macon	16.5	16.5	7.0	10.0
Savannah	16.5	16.5	7.0	9.0
Birmingham, Ala.	17.5	17.5	8.0	9.0
Mobile	18.0	18.0	9.0	8.0
Montgomery	19.0	19.0	9.0	9.0
Jackson, Miss.	16.0	16.0	7.0	10.0
Vicksburg	16.0	16.0	7.0	9.5
Jacksonville, Fla.	17.0	17.0	8.0	8.0
Miami	17.0	17.0	8.0	8.0
Pensacola	18.0	18.0	9.0	8.5
*Tampa	17.0	20.0	8.0	8.0
Lexington, Ky.	15.5	15.5	6.0	10.0
Covington	14.5	14.5	6.0	9.5
Louisville	14.5	14.5	6.0	9.0
Paducah	15.5	15.5	6.0	9.0

Price basis to tank-wagon consumers, effective January 4, 1937, 3 cents per gallon below tank-wagon price.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, Fla., has a city gasoline tax of 1 cent. All are included in the table.

*Temporary discounts to tank-wagon consumers in Tampa 3 cents per gallon below consumer tank-wagon price on Crown gasoline.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Albany	11.6	13.6	5.0	8.3
*Met. N. Y.: Manhat., Bronx, Queens, Brklyn., Staten Island	11.7	12.8	5.0	8.5
Buffalo	12.6	14.5	5.0	7.9
Rochester	12.8	14.8	5.0	8.5
Syracuse	12.2	14.0	5.0	8.8
Portland, Me.	11.6	13.5	5.0	8.5
Manchester, N.H.	12.3	14.5	5.0	8.9
Burlington, Vt.	12.1	14.4	5.0	8.7
Boston, Mass.	10.5	11.5	4.0	8.5
Worcester	11.1	12.1	4.0	9.0
Hartford, Conn.	10.9	12.8	4.0	8.4
New Haven	10.8	11.8	4.0	7.5
Providence, R. I.	10.5	12.5	4.0	8.5

*Does not include 2 per cent city sales tax, which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Effective February 15, 1939, the company changed its commercial consumer policy in New York and in New England points for tank-wagon delivery to the following: Annual purchases 10,000 gal. and under, tank-car price plus 2 cents per gallon; annual purchases 10,000 gal. up to 50,000 gal., tank-car price plus 1.5 cents per gallon; annual purchases 50,000 to 200,000 gal., tank-car price plus 1 cent per gallon; annual purchases 200,000 gal. and over, tank-car price plus ½ cent per gallon. Private consumers pay undivided dealer price, plus 2 cents per gallon. Private consumers receiving full compartment deliveries of at least 200 gal. receive a discount of ½ cent per gallon.

Pennsylvania and Delaware

ATLANTIC REFINING CO.

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Philadelphia, Pa.	12.0	13.5	5.0	10.5
Pittsburgh	13.0	14.5	5.0	10.5
Allentown	13.0	14.5	5.0	10.5
Erie	13.0	14.5	5.0	10.0
Scranton*	12.5	14.0	5.0	10.5
Altoona	13.0	15.0	5.0	10.5
Dover, Del.		14.0	5.0	10.5
Wilmington		13.5	5.0	10.0

Price basis to undivided dealers, dealer tank-wagon price less 0.5 cent per gallon.

Discount on kerosene, 2 cents per gallon off tank-wagon price on tank-wagon deliveries of 25 gal. or more at one time.

*Voluntary discount of 1 cent allowed to dealers only.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank truck	Gasoline: Serv. sta.	Gasoline: Incl. tax	Kero. tank wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	20.0	21.0	6.0	*17.5
Reno, Nev.	20.5	21.5	5.0	13.5
Portland, Ore	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.50
Spokane	21.5	22.5	6.0	16.50
Tacoma	20.0	21.0	6.0	13.50

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents. To commercial consumers: On tank-wagon price; on single deliveries of 40 gal. and over, advance quantity discount extended at time of delivery, 3 cents. Service-station schedule applies on single deliveries less than 40 gal. On kerosene in tank-car, transport-truck, and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank wagon.

March 18, 1939, split dealer discount was canceled.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Dir.	Gasoline: Incl. tax	Kero. tank wag.
Denver, Colo.	13.0	...	5.0	10.5
Grand Junction	17.5	...	5.0	12.5
Pueblo	13.0	...	5.0	9.0
Casper, Wyo.	16.5	...	5.0	11.5
Cheyenne	14.0	...	5.0	11.0
Billings, Mont.	18.0	...	6.0	12.0
Butte	16.0	...	6.0	13.0
Great Falls	18.0	...	6.0	12.0
Helena	16.0	...	6.0	12.5
Salt Lake, Utah	15.5	15.5	5.0	14.0
Boise, Idaho	21.1	21.1	6.0	16.0
Twin Falls	21.1	21.1	6.0	16.5
Albu'que, N. M.	13.5	...	6.5	10.0
Roswell	16.0	16.0	6.5	8.0
Santa Fe	17.5	17.5	6.5	10.0

*Includes city tax of 0.5 cent. †Includes state tax of 1 mill.

Tank wagon represents price to consumers. Dealer represents price to dealers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Cons'r tank car	Gasoline: Dir. tank wag.	Gasoline: Incl. tax	Kero. tank wag.
New Orleans, La.	13.75	16.25	8.0	†12.0
Baton Rouge	14.75	17.25	8.0	‡10.5
Alexandria	14.75	17.25	8.0	‡10.5
Lafayette	15.00	17.50	8.0	‡10.0
Lake Charles	14.75	17.25	8.0	‡10.0
Shreveport	13.50	16.00	8.0	‡9.0
Knoxville, Tenn.	18.00	19.50	8.0	12.5
Memphis	16.00	17.50	8.0	11.0
Chattanooga	17.50	19.00	8.0	12.0
Nashville	17.00	18.50	8.0	11.5
Bristol	18.25	17.75	8.0	12.0

Essolene at dealer price less 0.5 cent per gallon to undivided dealers.

†Includes 1-cent parish tax and 1-cent state tax. ‡Includes 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gal. or more in one territory take posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gal. at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less 0.5 cent per gallon. Kerosene prices include 1-cent state tax.

Effective February 24, 1939, the company reestablished in New Orleans the commercial consumer policy on motor fuel effective in the rest of the state.

Effective December 12, 1938, the company revised its commercial consumer policy on motor fuel in New Orleans, as follows: Single deliveries of less than 50 gal., consumer tank car plus 2 cents per gallon 50 to 199 gal., consumer tank car plus 1 cent per gallon; 200 gal. and over, consumer tank car plus 0.5 cent per gallon.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline: Tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Texarkana, Ark	13.0	5.0	7.0
Fort Smith	14.5	5.0	7.5
Little Rock	16.75	7.5	8.0
Muskogee, Okla.	12.0	5.0	7.0
Oklahoma City	10.0	5.0	6.5
Tulsa	11.0	5.0	6.0

Tank wagon represents price to consumers. If no dealer price is quoted, the tank-wagon price applies to all classes of trade.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wag.	Gasoline: Dir.	Gasoline: Incl. tax	Kero. tank wag.
Omaha	16.5	12.5	6.0	9.0
McCook	16.5	13.9	6.0	9.0
Norfolk	16.5	14.4	6.0	9.5
North Platte	17.8	14.0	6.0	10.0
Scottsbluff	18.5	15.5	6.0	10.0

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective January 1, 1935.

Texas

	Gasoline: Tank wag.	Gasoline: Dir.	Gasoline: Incl. tax	Kero. tank wag.
Dallas, Tex.	11.0	15.0	5.0	7.0
Fort Worth	11.0	15.0	5.0	7.0
Houston	13.5	17.5	5.0	8.0
San Antonio	12.0	16.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	16.2
V.M.&P. naphtha	16.5
Cleaners' naphtha	15.5
Stanisol	15.5

*Prices include 3-cent Illinois tax but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gal. lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline: Tank wag.	Gasoline: Incl. tax	Kero. tank wag.
Halifax, N. S.	25.0	10.0	19.0
St. John, N. B.	25.0	10.0	19.0
Montreal, Que.	24.0	8.0	16.5
Toronto, Ont.	23.5	8.0	16.0
Hamilton, Ont.	23.5	8.0	16.0
Winnipeg, Man.	26.5	7.0	29.5
Brandon, Man.	28.0	7.0	22.9
Regina, Sask.	25.0	7.0	20.0
Saskatoon, Sask.	28.0	7.0	23.0
Edmonton, Alta.	25.9	7.0	20.0
Calgary, Alta.	23.0	7.0	18.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon prices. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Tank-Wagon Changes

Standard Oil Co. of New Jersey May 10 reduced tank-wagon kerosene 0.5 cent in Roanoke.

Standard Oil Co. (Indiana) May 8 reduced tank-wagon gasoline 1.5 cent in Decatur; May 10, reduced dealer gasoline 0.5 cent in Grand Rapids.

Field Allowable Reduced

A temporary reduction of 2,000 bbl. a day in the Turner Valley, Alberta, crude allowable has been announced, due to the reduction of gasoline demand by the later spring and the exhaustion of storage capacity.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 21, 1940

The quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents a gallon on lubricating oils. Octane ratings in Middle West, Mid-Continent, and Southwest are based on A.S.T.M. method of testing.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞
60-62 400 grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞

NORTH TEXAS—

U. S. Motor grades:		
72-74 octane (regular)	.04⅝	.04¾
63-66 octane	.04⅛	.04¼
60 octane and below	.03¾	.03⅞
60-62 400	.03¾	.03⅞

NORTH LOUISIANA (Ark. and N. La. delivery)—

U. S. Motor grades:		
72-74 octane (regular)	.05⅛	.05⅜
63-66 octane	.04⅝	.04⅞
60 octane and below	.04¼	.04⅛

ARKANSAS (Ark. and N. La. del.)—

U. S. Motor grades:		
72-74 octane (regular)		.04¾
60 octane and below		.04

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅜	.04½
60 octane and below	.04	.04⅛
60-62 400 grades:		
72-74 octane (regular)	.04¾	.04⅞
63-66 octane	.04⅜	.04½
60 octane and below	.04	.04⅛

PENNSYLVANIA (Inland refineries)—

74-76 octane (regular)		.06
72-74 octane		.05¾
68-62 U. S. Motor	.04½	.05

CALIFORNIA (domestic movement)—

58-60 400, 65 oct. and higher	.07	.08
54-58 U. S. Motor	.05¾	.07

EAST COAST (domestic)—

U. S. Motor, 65 and above:		
*New York (Bayonne)	.06	.06¼
Philadelphia	.06	.06¼
Boston	.06¼	.06½
Baltimore	.06	.06¼
Charleston, S. C.	.06½	.06¾

*All grades of gasoline ⅛ to ¼ cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery ¼ cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
72-74 octane	.04½	.04¾
70-72 octane (leaded)	.04⅜	.04½
68-70 octane	.04¼	.04⅜
65-67 octane		.04¼

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.01⅛
Grade 18-55	.01¾	.01⅞

NORTH TEXAS—

Grade 26-70		.01¼
Grade 18-55		.01½

CALIFORNIA—

75-85 375-390	.05¾	.06

NORTH LOUISIANA (Ark. and N. La. delivery)—

Grade 26-70		.01⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110-flash, 540-550 e.p.	.03⅞	.04
41-43 gr., 300-320 i.b.p., 110-125 flash, 500-520 e.p.	.03⅞	.04
46-48 gr., 210-230 i.b.p., 480-max., e.p.		.04⅛

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43		.04
42-44		.04⅛

NORTH TEXAS—

41-43		.04

NORTH LOUISIANA (Ark. and N. La. delivery)—

41-43	.04	.04⅛

ARKANSAS (Ark. and N. La. del.)—

41-43		.04¼

PENNSYLVANIA (Inland refineries)—

45	.05	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04	.04⅛
42-44	.04⅛	.04¼

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04½	.05¾

NEW YORK (Bayonne, N. J.)—

41-43	.059	.06

***GULF COAST (domestic)—**

41-43		.04½

*Barge price ⅛ cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil		.03⅞
No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝
No. 2 straw, 32-36	.03⅜	.03½
No. 3 zero to 10, 28-32		.03¼

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅝	.03¾
No. 1 straw, 38-40	.03½	.03⅝

NORTH LOUISIANA (Ark. and N. La. delivery)—

No. 2, 32-36	.03	.03⅛

ARKANSAS (Ark. and N. La. del.)—

No. 2, 32-36	.03⅛	.03½

CHICAGO (Based on Group 3)—

Range oil	.03¾	.03⅞
No. 1 prime white, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅜	.03½
No. 3, zero to 15, 28-32	.03⅛	.03⅜

NEW YORK (Bayonne, N. J.)—

*No. 1	.059	.060
*No. 2		.054
*No. 4		.054

*Barge deliveries ⅛ to ¼ cent under above tank-car price.

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.45	.50

NORTH TEXAS—

U.G.I. gas oil, under 35	.02⅝	.02¾
No. 5, low pour point, 18-22	.72½	.77½
No. 6, 15 and above, 8-14	.45	.50

NORTH LOUISIANA (Ark. and N. La. delivery)—

10-14 fuel oil, industrial	.65	.70

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 5, low pour point, 18-22	.75	.80
No. 5, 15 and above, 18-22	.60	.70
No. 6, low pour point, 10-16	.60	.70
No. 6, 15 and above, 10-16	.45	.55

PENNSYLVANIA (Inland refineries)—

36-40	.03⅞	.04⅛

CALIFORNIA—

Los Angeles:		
30-40 gas oil, per bbl.	1.15	1.25
24 plus diesel, per bbl.	1.15	1.25
24 plus diesel (bunkers)	1.20	1.35
12-16 (bunkers at tidewater)	.65	.75
10-16 (cargo lots)	.65	.75
12-17 (tank cars)	.60	.75
10-17 (high sulfur)	.50	.65
San Joaquin Valley:		
10-18 (tank cars)	.50	.70
24 plus diesel, per bbl.	1.15	1.25
San Francisco:		
24 plus diesel, per bbl.	1.35	1.40
24 plus diesel (bunkers)	1.40	1.50
10-16 (bunkers)	.80	.85

GULF COAST—

No. 2 fuel	.03½	.03¾
43-47 diesel	.03⅞	.04
48-52 diesel		.04
53-57 diesel	.04	.04¼
58-and-above diesel	.04¼	.04½
Bunker C (bulk cargoes)	.72	.80
Bunker C (bunkers)	.80	.90

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil	.053	.056
28-30 diesel (lighterage 6¼c per bbl.)		2.20
28-30 diesel (tank cars)	.05	.055
Bunker C (to ocean-going ships in N. Y. Harbor)		1.50
Industrial fuel (tank cars)	.035	.04

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

200-210 D, 10-25	.22
150-160 D, 0-10	.18
150-160 D, 10-25	.17½
100-110 D, 0-10	.17
100-110 D, 10-25	.16½
Steam refined:	
600 dark green (untreated)	.07½

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):	
10 pour point	.21¼
15 pour point	.20¼
25 pour point	.19
Steam refined:	
600	.11½
650	.14
600 flash	.15½
630 flash	.17

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

0-10 pour point:	
150-3	.10½
180-3	.11½
200-3	.12
250-3	.13
280-3	.13½
280-4	.13
300-3½	.14
350-3½	.14½
400-3½	.15
500-3½	.16
600-3½	.17
100-2½ paraffin oil, 10-25	.06¼
10-25 pour point:	
200-3	.11½
250-3	.12½
280-3	.13
280-4	.12½

GULF COAST—

Pale oils:		
100-3	.05½	.05¾
200-3	.07¼	.07½
300-3	.07¾	.08
500-3½	.08½	.09
750-3½	.09	.09½
1,200-3½	.09¾	.10
2,000-4	.10	.10¼
3,000-4	.12¼	.12½
Red oils:		
200-5-6	.07	.07¼
300-5-6	.07½	.07¾
500-5-6	.08¼	.08¾
750	.08¾	.09¼
1,200-5-6	.09¾	.09¾

CALIFORNIA (moving to dom. market)—

Pale oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¾	.08
300-2½-3	.07¾	.08
400-3-4	.07¾	.08
450-3-4	.07¾	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¼	.11½
750-6½ plus	.09¼	.11½
900-6½ plus	.09¾	.11½

PENNSYLVANIA—

150 vis. at 70° F., 3 color, 400-405 flash:	
Zero pour point	.23
10 pour point	.22
15 pour point	.21
25 pour point	.19½ .20
200 vis. at 70° F., 3 color:	
Zero pour point	.25½
10 pour point	.24½
15 pour point	.23½
25 pour point	.21½ .22

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (A.m.p.) w.c. scale	.04¾	.05

PENNSYLVANIA (Inland refineries)—

122-124 (A.m.p.) w.c. scale		.04¾
124-126 (A.m.p.) w.c. scale		.04¾

NEW YORK—

Wax in bags fully refined:	
125-127 (A.m.p.) wax	.0630
128-130 (A.m.p.) wax	.0640
130-132 (A.m.p.) wax	.0660
133-135 (A.m.p.) wax	.0680
135-137 (A.m.p.) wax	.0700
Crude scale:	
124-126 (A.m.p.) w.s.	.0475
124-126 (A.m.p.) y.s.	.0475
Petrolatum in barrels, carload lots:	
Dark green	.02625 .03125
Amber	.02875 .03375
Extra amber	.03000 .03625
Lily white	.05125 .05875
Snow white	.06125 .06875
Cream	.04125 .04875

Export Prices

GASOLINE

GULF COAST—

64-66 375	.04¼	.04⅜
61-63 390	.04¼	.04⅝
60-62 400	.04¼	.05⅛

LOS ANGELES—

U. S. Motor grades:		
Above 69 octane	.06¼	.06½
65-69 octane	.05¾	.06¼
60-65 octane	.05½	.05¾

KEROSENE

GULF COAST—

41-43 water white		.04½

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.b. in bbl.)—

Cylinder stocks:		
600 S.R. unfiltered	.19	.20½
630 S.R. unfiltered	.20	.22½
600 flash, S.R.	.21	.23½
630 flash, S.R.	.26	.26½
Bright stock:		
Light, 25 pour point	.20	.30

NEUTRAL OIL

300-3 color		.31
150-3 color	.29	.30

PARAFFIN WAX

NEW YORK (prices per pound)—

123-125 A.m.p.	.06⅝
125-127 A.m.p.	.06¾
128-130 A.m.p.	.07
133-135 A.m.p.	.07⅝
135-137 A.m.p.	.08¼
Crude scale:	
124-126 w.s.	.04¾
124-126 y.s.	.04¾

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1940 High	1940 Low	Week ended May 18 High	Week ended May 18 Low	Week ended May 18 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
58½	47½	54	47½	47½	Amerada Corp.	788,675	N.P.	50cQ	4-30-40	$2.00	$2.07	$3.04	74½	50	78	55
27⅛	19⅝	26¼	19⅝	20½	Atlantic Refining	2,663,999	$25	25cQ	6-15-40	1.00	1.40	3.51	24¾	18⅛	27⅝	17⅞
16⅝	9⅞	14⅛	9⅞	10	Barber Asphalt Co.	390,223	$10	25c	5-21-40	.25	—.85	1.91	21	10¼	23¾	12⅛
13⅜	8⅛	11⅛	8⅛	8½	Barnsdall Oil Co.	2,250,344	$5	15c	6-8-40	.90	1.26	.85	19½	11⅛	21⅝	10⅛
8⅛	6⅜	7½	6⅜	6⅜	Consolidated Oil Corp.	13,751,846	N.P.	20cQ	5-15-40	.80	.55	1.48	9⅞	6½	10⅝	7
25	19⅞	23	19⅞	20	Continental Oil of Delaware	4,682,581	$5	25cQ	3-25-40	1.00	1.10	2.98	31½	19⅞	35⅝	21¼
6⅞	3⅝	5½	3⅝	4	Houston Oil	1,098,618	$25	....	10-17-30	....	.83	.94	9⅜	4½	9⅜	5
14⅜	9	13⅛	9	9⅜	Lion Oil Refining	435,815	N.P.	25cQ	4-20-40	1.00	2.09	2.17	18⅛	10	25⅛	15⅝
17⅜	12½	16⅝	12½	12¾	Mid-Continent Petroleum	1,857,912	$10	40c	6-1-40	.60	.56	2.86	18	11⅛	22⅝	12¼
11	8⅝	10½	8⅝	8⅝	Mission Corporation	1,379,245	$10	40c	12-15-39	.65	1.04	1.31	14⅞	8⅝	17⅜	10⅝
9⅜	5⅜	8⅜	5⅜	5½	National Supply	1,155,517	$10	....	12-22-37	....	—.79	4.90	15½	5⅜	23	12½
8¾	6⅛	8	6⅛	6¼	Ohio Oil Co.	6,563,377	N.P.	20c	6-15-40	....	.25	1.30	10½	6	14⅞	8⅞
8¼	6½	8	6½	6½	Pacific Western Oil	1,000,000	N.P.	40c	12-19-39	.40	1.22	1.39	11⅞	7	15⅞	10¼
8½	6¾	7⅝	6¾	6¾	Pan American Pet. Trans.	4,702,945	$5	....	12-31-37	....	.08	1.18	8¾	5	9¼	6¼
41⅜	31⅝	38½	31⅝	32¼	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-40	2.00	2.03	5.42	46½	31¼	44⅜	27¼
22¾	17¼	20⅝	17¼	18	Plymouth Oil Co.	1,006,200	$5	35cQ	3-30-40	§1.40	2.59	2.85	24	17⅛	25⅜	15
11½	7⅝	10⅜	7⅝	7¾	Pure Oil Co.	3,982,031	N.P.	25c	12-20-39	.25	.38	2.15	11⅜	6⅛	13½	8¼
8⅜	6	7	6	6	Richfield Oil Corp.	4,010,000	N.P.	50c	12-18-39	.50	.51	.35	10¼	6⅝	9⅞	5
20	13	17	13	13	Seaboard Oil of Delaware	1,244,383	N.P.	25cQ	6-15-40	1.00	1.52	1.97	24⅜	15½	27½	15½
13⅛	8	12	8	9¼	Shell Union Oil	13,070,625	N.P.	25c	12-20-39	.50	.72	1.44	17¼	9⅞	18⅜	10
23¼	17	20½	17	17⅛	Skelly Oil	995,349	$15	25c	1-30-40	.75	2.27	6.07	29½	15½	34⅜	18½
12½	8⅛	10⅛	8⅛	8⅜	Socony-Vacuum	31,206,071	$15	25cSA	3-15-40	.50	1.29	1.82	15⅛	10¼	16⅜	10⅜
26⅛	19⅝	21⅜	19⅝	19⅝	Standard Oil of California	13,004,153	N.P.	25cQ	3-15-40	1.10	2.22	3.17	33⅝	24¼	34⅞	25⅛
29	24	27⅛	24	24⅝	Standard Oil (Indiana)	15,272,020	$25	25c	6-15-40	1.25	1.82	3.66	30	22⅜	35½	24⅜
46½	33¾	42⅝	33¾	35	Standard Oil of New Jersey	26,618,065	$25	1.00†	6-15-40	‖1.25	2.86	5.64	53½	38	58⅜	39⅜
65⅞	55½	65½	55½	55½	Sun Oil	2,316,484	N.P.	25c*	6-15-40	1.00	1.07	3.86	66	45⅝	65⅛	45
2½	1½	2	1½	1⅝	Superior Oil Corp.	1,388,979	$1	10c	12-28-38	....	.24	.32	3⅜	1⅜	4¼	1⅜
47⅝	37¾	46¼	37¾	37⅞	Texas Corp.	10,876,882	$25	50cQ	4-1-40	2.00	2.13	5.02	50⅜	32½	49⅝	32⅝
4¼	2⅝	3⅞	2⅝	2⅞	Texas Gulf Producing Co.	888,146	N.P.	10c	6-15-40	.20	.86	.68	5¾	3¼	5⅞	2⅝
8⅝	6⅛	7½	6⅛	6⅛	Texas Pacific Coal & Oil	888,236	$10	10c	6-1-40	.40	1.16	1.11	11⅜	7	12½	7
12	10	11¾	10	10¼	Tide Water Associated	6,375,253	$10	25c	6-1-40	.80	1.28	2.08	14¼	9½	15⅝	10⅛
17½	13½	15⅛	13½	13½	Union Oil Co. of California	4,666,270	$25	25c	5-10-40	1.05	1.47	2.58	19⅜	15⅛	22½	17⅛
29⅞	22¾	29¼	25⅞	26	Union Tank Car Co.	1,177,381	N.P.	45c	6-1-40	1.30	1.16	1.70	24¼	20⅛	23½	20
3⅝	1⅞	2½	1⅞	2	Wilcox Oil & Gas	487,568	$5	10c	2-15-40	....	.52	.24	4¼	2⅜	3½	1⅝

*Also 5 per cent in stock. †Includes extras. ‡Also 2 per cent in stock. §Also 4 per cent in stock. ‖Also 2½ per cent in stock. ¶Also 1½ per cent in stock. —Deficit.

New York Curb Exchange

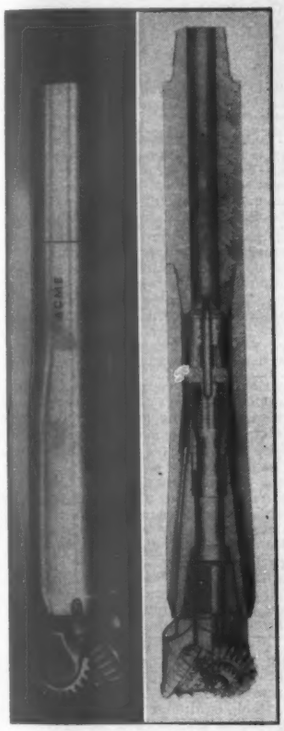
1940 High	1940 Low	Week ended May 18 High	Week ended May 18 Low	Week ended May 18 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1939	Com. sh. earn. 1938	Com. sh. earn. 1937	1939 High	1939 Low	1938 High	1938 Low
10¾	6⅛	9	6½	6⅝	American Republics Corp.	1,308,049	$10	10c	7-11-38	....	—$0.22	$0.27	11¾	5½	11¾	5
3¼	1⅜	2⅛	1¾	1⅞	Bridgeport Machine Co.	270,000	N.P.	$1.25	12-30-37	....	—.14	1.90	7¼	2½	10¼	4⅞
43	28	38	35	35½	Buckeye Pipe Line Co.	200,000	$50	$1	6-15-40	$2.50	2.36	4.02	34¾	26½	39	22½
117	102	115	102	104	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-40	6.00	5.32	6.73	130	108¾	128	97
6¾	4	6	4½	5⅛	Cities Service (new)	3,704,067	$10	....	6-1-32	....	.23	1.02	9¼	4¼	11	5⅛
2⅛	1⅛	2	1½	1⅝	Cosden Petroleum	462,551	$1	....	.....	....	....	.19	2⅛	⅛	2⅜	⅞
24¼	17½	23½	17½	17½	Creole Petroleum	6,975,383	$5	50cSA†	6-15-40	1.00	1.64	1.61	28	16¾	27½	17½
4⅜	3⅛	3¾	3⅛	3⅛	Darby Petroleum	351,390	$5	25cSA	1-15-39	.25	....	1.36	7⅛	3⅜	10¼	5½
2	1½	1½	1½	1½	Derby Oil & Refining	263,162	N.P.	....	.....	....	—.91	1.34	2⅝	1½	3½	1½
31	23½	25¼	25¼	25¼	Eureka Pipe Line	50,000	$50	75c	5-1-40	2.00	—.37	—.12	23	15⅛	31	16
39⅞	31	37¼	31	32	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-40	1.00	1.43	3.51	45½	29¼	46⅞	33
68	47⅛	59	47⅛	48⅜	Humble Oil & Refining	8,987,840	N.P.	62½c	4-1-40	2.00	3.98	5.22	71	52½	72⅝	56
12⅜	8 .	9⅜	8	8	Imperial Oil of Canada	26,965,078	N.P.	37½c†	6-1-40	1.00	.96	.98	17	11⅜	19½	14⅛
7¾	5¾	7	6¼	6¼	Indiana Pipe Line	300,000	$10	10c	5-15-40	.50	.47	1.03	7¼	5½	9⅜	6
19¾	10¼	15	10¼	11⅜	International Petroleum	14,324,088	N.P.	75c	6-1-40	1.75	1.98	....	27½	17	31¼	21
2¾	2¼	2½	2¼	2¼	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	.14	.17	3¾	2⅛	5	2⅛
10¾	8½	10¼	8½	8½	Lone Star Gas	5,553,747	N.P.	20c	4-22-40	.70	.88	1.14	10½	7⅛	10⅝	6⅝
6¼	4⅛	5⅛	4⅛	4⅛	Louisiana Land & Exp.	2,977,449	$1	10c	3-15-40	.35	.45	.58	7¾	4	9⅜	6½
17	14½	14½	14½	14½	Margay Oil Corp.	149,943	N.P.	25cQ	4-10-40	1.00	2.28	3.26	17	14½	24	16
9⅝	5¾	8⅛	6¾	6¾	Midwest Oil Co.	998,474	$10	45c	6-15-40	.90	.93	1.14	8¾	6⅝	9¾	6⅝
6¼	4⅞	6⅛	4⅞	4⅞	Mountain Producers	1,593,584	$10	30cSA	6-15-40	.60	.62	.76	6	4⅞	5⅝	4½
13⅛	10½	12	10½	10½	National Fuel Gas	3,810,183	N.P.	25cQ	4-15-40	1.00	.84	.96	14	11¼	14⅝	11½
12½	8⅜	11	10	10⅛	National Transit	509,000	$12.50	50c	12-15-39	.85	.88	1.19	9½	7⅛	9¼	6½
1¼	1	1⅛	1	1	New Mexico and Arizona	1,000,000	$1	1c	12-1-37	....	.02	.02	1⅜	1	2⅝	1½
7¾	5¼	7	6¾	6¾	New York Transit	100,000	$5	25c	4-15-40	.40	.16	.49	6	4	4½	3½
9⅞	6¾	8¼	8¼	8¼	Northern Pipe Line	120,000	$10	40c	6-1-40	.30	.24	.78	7	4½	6	4
5½	3¼	4⅞	3¼	3¼	Pantepec Oil	2,857,000	$1	....	.....	....	....	....	7⅜	4	7⅜	3½
3¼	1⅞	2½	1⅞	1⅞	Root Petroleum Co.	336,045	$1	25c	2-1-37	....	.17	—.17	5	1¼	4½	1⅝
2½	1½	2⅛	1½	1½	Ryan Consolidated	298,931	N.P.	....	.....	....	.29	.46	3	1⅞	4	2⅛
11¾	4⅞	9¾	8	8	Southern Pipe Line	100,000	$10	15c	3-1-40	.30	—.27	.85	4⅞	3½	5⅜	3¼
44	33⅛	37¼	33⅛	33¼	South Penn Oil	1,000,000	$25	37½c	3-29-40	3.00	1.44	4.64	40½	26¾	39	28¾
35	22	25	25	25	Southwest Penna. Pipe Lines	35,000	$50	$5	4-1-40	2.00	—.41	.95	23	18	22¼	16½
20⅞	17⅜	20½	17⅜	17½	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-40	1.30	1.45	1.80	20⅛	17¼	18⅜	15
41⅜	28⅜	39	31¼	31¼	Standard Oil of Ohio	753,740	$25	25c	6-15-40	1.50	1.81	3.67	32⅜	17	22⅜	16¼
2	1½	1⅝	1½	1½	Sunray Oil	2,007,076	$1	5c	5-1-40	.10	.23	.42	2⅜	1⅜	3¼	2
2¾	2	2⅝	2	2	Texon Oil & Land	936,024	$2	10c	3-29-40	.10	.56	.51	4	2⅝	5¼	3½
3⅜	2¼	2⅞	2¼	2½	Transwestern Oil Co.	750,000	$10	....	.....	....	—.12	.48	6	2½	7⅝	4¼
2⅛	1⅛	1½	1⅛	1¼	United Gas Corp.	7,818,959	$1	....	.....	....	—.51	.25	3⅜	1½	5¼	2⅝

†Includes extras. —Deficit.

EQUIPMENT PROGRESS...

Acme Mud Collar Designed to Stop Mud Rings and Balled-Up Bits

The Acme mud collar, announced by Acme Fishing Tool Co., Parkersburg, W. Va., is designed to eliminate mud rings and balled-up bits in rotary drilling and to reduce the number of fishing jobs. The device is a collar, with rotary tool joint, used between the rotary bit and the drill collar. It houses a fluid cylinder, from which six pressure streams are diverted to the outside of the bit.



With the six fluid streams constantly flowing over the outside of the bit—forced through the tubes under 200 to 1,000 lb. pressure—it is assured, according to the manufacturer, that the bit will be kept clean under normal drilling conditions. Mud rings and balled-up bits, therefore, become extremely rare. Delays in pulling out are largely eliminated. A clean bit means faster, smoother, easier cutting; making better hole, with less dragging and strain on the drill pipe.

Should it become necessary, however, to make a cut-off, the operator can cut within 26 in. of the bottom, by using an Acme mud-collar float, thus leaving a minimum of iron in the hole, making it much easier to work over and fish out. In fact, with the Acme mud collar, all hazards of drilling, including time-wasting and money-wasting fishing jobs, are greatly reduced, the manufacturer says.

The mud collar was devised by an experienced driller, followed by many months in the company's own engineering department and plant, devoted to design and mechanical perfection. After that came months of actual testing, under varying conditions, in the field.

This new oil-field invention is simple in construction, with an even dozen fixed (nonfriction) parts in the completed assembly.

●

AMONG EQUIPMENT MEN

Bussmann Takes Place of Foster

Wickwire Spencer Steel Co., 500 Fifth Avenue, New York, announces the resignation of R. L. Foster as vice president in charge of sales, effective May 1, 1940, and the simultaneous appointment of A. G. Bussmann as general sales manager, to assume all the responsibilities previously carried by Mr. Foster. Mr. Foster's retirement comes after about 40 years in the wire and wire products industries. Mr. Bussmann's appointment follows 8 years of sales activities with the parent company and its subsidiary, American Wire Fabrics Corp.

Thebedaux Joins W-K-M Sales Staff

W-K-M Co., Inc., Houston, Tex., has appointed D. L. (Dave) Thebedaux to its sales staff, with headquarters in Wichita Falls, Tex., from which point he will serve the North Texas territory. Mr. Thebedaux has long been associated with various branches of the oil industry and has worked in practically every leading oil field in the United States and Mexico. For the past few years he has been drilling in Oklahoma for the Hodges and for the Bristow interests.

Cluff Now General Sales Manager

Expanding its sales organization in the nine-state area served by its Mid-Continent factory in Tulsa, General Paint Corp. has appointed E. R. "Bill" Cluff, of the San Francisco division, general sales manager in that area, according to William D. Teubner, vice president and general manager of the Tulsa plant. Mr. Cluff started in the San Francisco plant 11 years ago and has been serving as sales manager of the central division.

General Paint's Mid-Continent factory was built originally by Hill-Hubbell & Co. to serve the needs of the petroleum and building industries throughout the Southwest. The company makes a complete line of paints and varnishes and owns valuable patents for pipe coating and wrapping.

Rairden Wire-Rope Sales Manager

Wickwire Spencer Steel Co., 500 Fifth Avenue, New York, has appointed A. S. Rairden wire-rope sales manager. For the past 7 years as rope engineer, Mr. Rairden has assisted in the production, sales, and servicing of wire rope.

A graduate of Massachusetts Institute of Technology, Cambridge, Mass., where he received a bachelor of science degree in metallurgical and mining engineering, Mr. Rairden went first with the Carnegie Steel Corp., where he was employed on the iron-blast furnaces. In 1923 he was transferred to the American Steel & Wire Co., where he became wire-rope mill superintendent. Shortly afterward, Mr. Rairden was appointed to the U. S. Government committee assigned to the task of compiling and revising master wire-rope specifications. From 1930 to 1933 Mr. Rairden was with American Cable Co. and Hazard Wire Rope Co. as chief engineer and assistant to the vice president in charge of sales.

Flame-Treating Plant Is Opened

Oxy-Acetylene Treating Corp. has opened a flame-treating shop at 402 North Bryan Street, Houston, Tex., with J. H. Sandberg as manager. The company specializes in precision processes for flame hardening, flame strengthening, and flame softening, and its services are expected to find wide demand in the oil industry. Flame treating of piston rods to increase their life is among jobs turned over to the new shop.

Merla Announces Export Agent

The Merla Tool Corp., Dallas, Tex., has made an agreement with Frick-Reid Supply Corp., Tulsa, designating Frick-Reid's export sales office, 30 Rockefeller Plaza, New York, as distributor of all Merla equipment manufactured and sold for foreign export. The New York representatives of Frick-Reid are G. W. Hamill and J. W. True.

MISSION MANUFACTURING CO. MEN HOLD SALES MEETING

The Mission Manufacturing Co. of Houston, Tex., held its annual sales meeting in Tulsa just before the opening of the International Petroleum Exposition.

Sales representatives from Texas, Louisiana, Oklahoma, Illinois, and New York were in attendance.

Front row: James H. Tucker, Houston; D. J. Ollie, Houston, J. A. Butler, Shreveport, La.; Fred S. Price, Wichita Falls, Tex.; Johnny Best, Houston; Allan Nelson, Oklahoma City, Okla.; O. K. Ryan, Lubbock, Tex. Back row: E. H. Trammel, New York; Joe Young, Olney, Ill.; Rob Chapman, Corpus Christi, Tex.; Ralph Clemons, Pasadena, Calif.; Barney Barnhill, Mount Vernon, Ill.; W. T. Campbell, Houston; Cobb Turner, Shreveport; W. B. Sharp, Houston.

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FOR SALE: Oil lease, has one producing well, NE¼ of SW¼ of Sec. 17, Twp. 18N, Range 12 East. 40 Acres Creek Co., Okla. For particulars, write Wade Walker, 1124 1/5 Lodi Place, Hollywood, California.

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ZINGERY OIL MAP CO., Fort Worth, Tex.

Situations Wanted

OIL ACCOUNTANT, thoroughly familiar with all phases of drilling and oil company accounting and taxation, 15 years' experience, desires new connection with progressive firm. 35 years old; conscientious; welcome responsibilities. Box K-623, The Oil and Gas Journal, Tulsa, Oklahoma.

WANTED Position by young man thoroughly experienced, Land Depart. Rental and Division order work, reasonable salary. Address Box K-635, The Oil and Gas Journal, Tulsa, Okla.

REFINERY PROCESS SUPT. Graduate chemical engineer. 10 yrs.' supervisory experience with major oil company. Lube Oil specialist. Address Box K-633, The Oil and Gas Journal, Tulsa. Okla.

PETROLEUM Engineer graduate Univ. Calif. 8 years' varied experience, 5½ with Shell Oil Co. Address P. O. Box 74, Oilfields, Calif.

GEOLOGIST, 14 years' experience scouting and land, seven years geologist in foreign countries with major companies desires position with small company or independent operator. Address Box K-631, The Oil and Gas Journal, Tulsa, Okla.

I KNOW something of installations and connections, bottom-hole tests, paraffin removal, mud conditioning, care of cores and samples, office work, and plain ditch digging. I'm 28, single, have three years flush production experience and 2 college degrees (not engineering). Other useful abilities, would try selling, go anywhere. Can you use me? Box 2222, Norman, Oklahoma.

REFINERY Process Engineer, Chemical Engineer, 20 years diversified industrial experience including process research, development, design, consultation, refinery operation. Capable executive; excellent record in handling labor and lowering production costs. Outstanding ability to analyze refinery requirements and processes. Desires position as refinery executive in operation or engineering. Address Box K-534, The Oil and Gas Journal, Tulsa, Okla.

DRILLING and production superintendent, Rotary or cable tools desires position with active reliable company. References from present employers. C. R. Todd, 508 Continental Building, Dallas, Texas.

SALES ENGINEER
With three years' experience in production equipment and excellent references wants employment with merchandiser of oil field equipment. Twenty-nine years old, single and willing to travel or be transferred. Address BOX K-624, The Oil and Gas Journal, Tulsa, Okla.

MANUFACTURERS REPRESENTATIVE
Age 36, now employed, 14 years' experience production equipment. Wide acquaintance production trade Mid-Continent area. College education. Would like to contact manufacturers interested in sales results on commission or salary basis. Live in Tulsa and can be reached there during oil show.
BOX K626
OIL AND GAS JOURNAL, TULSA, OKLA.

Hemmed in by red tape and policy, PETROLEUM GEOLOGIST, now employed by major company, wishes to join small company or drilling contractor engaged in the operation or acquisition of producing properties, farmouts, royalty or wildcat blocks. Thoroughly familiar with geology and current plays in West Texas and New Mexico. Acquainted with other areas. Excellent education, varied geologic and geophysical experience; young, energetic and aggressive. Will consider any proposition involving either straight salary or salary plus interest in plays. References and past record in detail. Address Box K-632, The Oil and Gas Journal, Tulsa, Okla.

Help Wanted

WANTED: An experienced man, as scout for independent oil company. Good salary, expenses for right party. Give references and qualifications. Apply P. O. Box 343, St. Louis, Missouri.

WANTED: Experienced refinery designing draftsman. Give experience. Address Box K-622, The Oil and Gas Journal, Tulsa, Oklahoma.

CLASSIFIED ADVERTISING RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgment is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	$1.05	$1.80	$2.55	$3.30
4 Lines	1.40	2.40	3.40	4.40
5 Lines	1.75	3.00	4.25	5.50
6 Lines	2.10	3.60	5.10	6.60
7 Lines	$2.45	$4.20	$5.95	$7.70
8 Lines	2.80	4.80	6.80	8.80
9 Lines	3.15	5.40	7.65	9.90
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1 Inch	13 times	4.50 per inch
1 Inch	26 times	4.00 per inch
1 Inch	52 times	3.50 per inch

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We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma